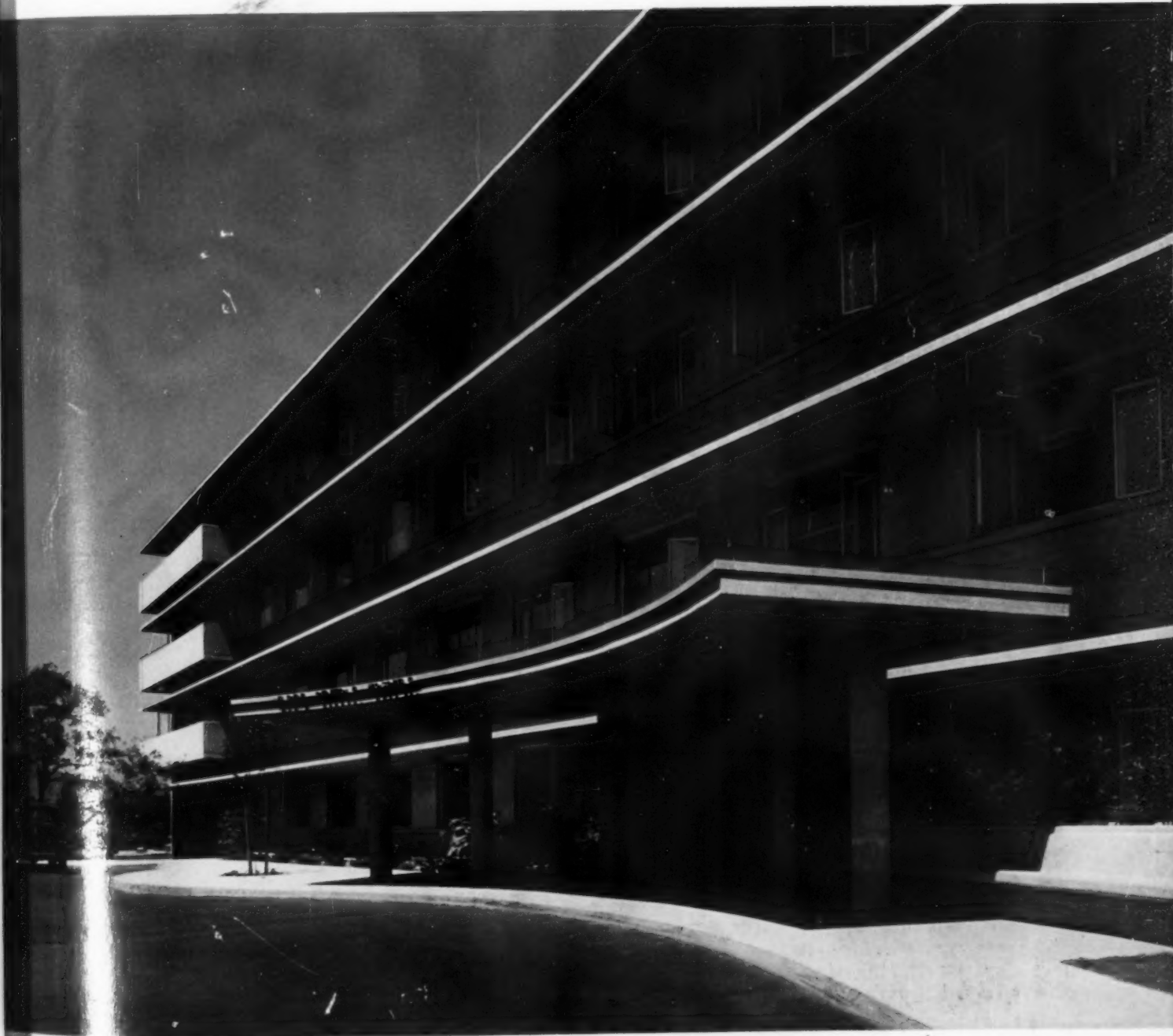
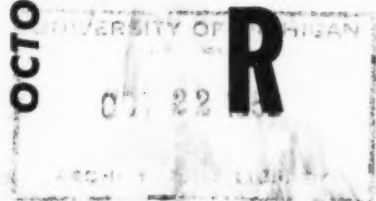


OCTOBER 1952

ARCHITECTURAL

R E C O R D



Marin General Hospital, Greenbrae, California; Robert Stanton, Architect

BUILDING TYPES STUDY NUMBER 191 HOSPITALS



How safe is a hospital?

International News Photo

Above: Fire in a mid-western hospital, out of control, destroys the building, takes the lives of forty patients.

This year there will be an average of three hospital fires reported per day and they will follow the general pattern shown in the insert.







Not all of these fires will develop into disasters, for most modern hospitals have excellent fire protection. But experience shows that some few will, and that these few will take an almost inevitable toll of lives and property. These will be hospitals not now provided with means of stopping fire quickly at its source.

Hospital fires *must* be put out before choking fumes reach bedridden patients, before searing heat can seal off floors or corridors, before panic can have a chance to develop. Grinnell Automatic Sprinklers offer such protection. Grinnell Automatic Sprinkler Systems guard against loss of life and property by stopping fire at its source, wherever and whenever it may strike, with automatic certainty. Seventy-four years experience proves this.

For help in planning fire protection, without obligation to you, write Grinnell Company, Inc., Providence, R. I. Branch offices in principal cities.

Here's Where Hospital Fires Start

(Survey by National Fire Protection Association)

		
Service Rooms 52.1%	Outside 15.5%	Patients' Quarters 11.4%
		
Nurses' Rooms 5.8%	Operating 3.3%	Miscellaneous 11.9%



GRINNELL
FIRE PROTECTION SYSTEMS



—Manufacturing, Engineering and Installation of Automatic Sprinklers Since 1878—

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Cover: Marin General Hospital, Greenbrae, Calif. Robert Stanton, architect; Roger Sturtevant photo

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THE RECORD REPORTS

CENTENNIAL OF ENGINEERING: A.S.C.E. MARKS 100 YEARS

THE CENTENNIAL OF ENGINEERING at Chicago September 3-13 was a bang-up birthday party for the American Society of Civil Engineers and the big climax of the Society's centennial year. Architects can take a special interest in this aspect of the Centennial — first because at its founding in 1852 the first national organization of civilian engineers was actually the American Society of Civil Engineers and Architects; and second, because the American Institute of Architects, founded as a separate organization for architects five years later, will be celebrating its own centennial in 1957.

The Centennial was also the greatest convocation of engineers the world has ever known. Planned to include all branches of engineering, as they were all once included in A.S.C.E., it attracted nearly 20,000 engineers representing more than 60 societies in this country and 20 foreign nations. It had as one of its major purposes the promotion of public understanding of the engineering profession.

The Centennial program was divided into two parts — the programs and special events arranged by Centennial of Engineering, 1952, Inc.; and the programs of 65 individual engineering societies and organizations that scheduled technical sessions in Chicago during the period of the convocation.

The American Institute of Architects joined the National Association of



A.S.C.E. President Carlton Proctor and A.I.A. President Glenn Stanton at "Re-Union of Architecture and Engineering 1852-1952," A.I.A. convention exhibit in tribute to A.S.C.E.

Home Builders and the Producers' Council in sponsoring one of these technical sessions — a progress report on modular coordination (see page 26).

Development of the Centennial theme centered on an ambitious program of symposiums on 12 subjects chosen "because of their high significance in the everyday lives of our people and in the industrial development of the country."

Of most direct concern to architects were the addresses at the "Structures and Construction" symposium by John O. Merrill, of Skidmore, Owings & Merrill, Architects & Engineers; Linton E. Grinter, Dean of the Graduate School and Director of Research at the Uni-

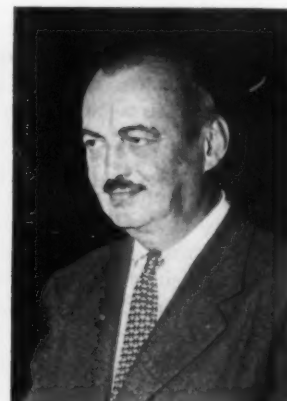
versity of Florida; and Walter C. Voss, head of the Department of Building, Engineering and Construction at Massachusetts Institute of Technology.

Design and the Needs of Men

Mr. Merrill, who had been asked to discuss the subject "How Man Has Developed Buildings to Serve His Every Need," warned that any assumption that architects and engineers have already reached a final goal fails to take into account either the changing and dynamic nature of man's needs or the rapidity of technological advances in the construction industry.

But Mr. Merrill conceded that even
(Continued on page 26)

"Structures and Construction": Walter Voss and Chairman Waldo G. Bowman, editor of Engineering News-Record; Engineer David B. Steinman of New York and Willard Chevalier, McGraw-Hill executive vice president; John O. Merrill



THE RECORD REPORTS

WILLIAM F. LAMB DIES; DESIGNED EMPIRE STATE

WILLIAM FREDERICK LAMB, 68, of the New York architectural firm of Shreve, Lamb and Harmon Associates, died September 9 after a brief illness.

Mr. Lamb, a Fellow of the American Institute of Architects and the National Institute of Arts and Letters, was in charge of design for the Empire State Building; he and his firm became the recipients of the 1931 Gold Medal of the A.I.A. for the design of the tallest building in the world.

Among numerous other New York buildings designed by the firm are the 39-story Bankers Trust Company at 14 Wall Street and Best & Company's new building at Fifth Avenue and Fifty-first Street. The Acacia Mutual Life Insurance Company Building in Washington, D. C., and buildings at Cornell University, Connecticut College for Women, the Kent School and Hunter College in New York are among other works of the firm.

The present firm was founded by Mr. Lamb and R. H. Shreve, who had met while both were members of the firm of Carrère & Hastings. Arthur L. Harmon joined the firm in 1929.

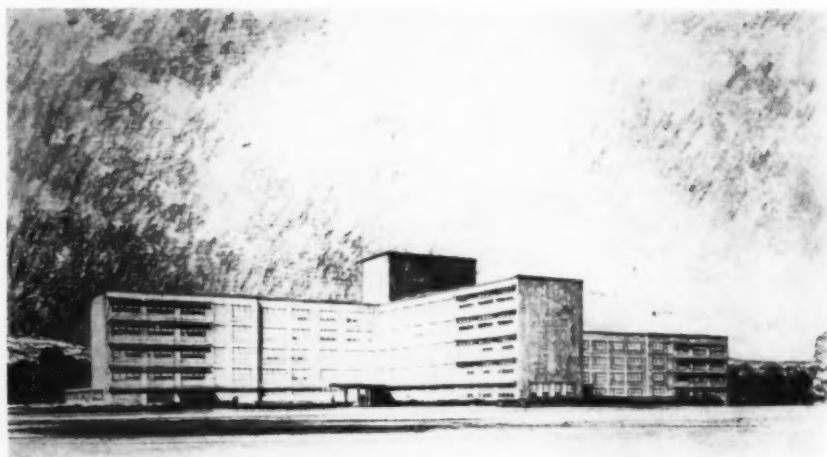
J. G. BELCHER DIES AT 48; ARCHITECTURAL PUBLISHER

JOHN GODDARD BELCHER, vice president and a director of Reinhold Publishing Corporation of New York and publisher of *Progressive Architecture*, died August 30 in a seaplane crash at Boothbay Harbor, Me., where he was on vacation with his family. He was 48 years old.

A 1926 graduate of the University of Illinois, Mr. Belcher joined Reinhold in Chicago in 1937 as a salesman for *Pencil Points*, predecessor of *Progressive Architecture*. In 1942 he became midwest advertising manager, with headquarters in Chicago; and in 1943 he went to New York as business manager of *The New Pencil Points*. He became associate publishing director of *Progressive Architecture* in 1945 and publishing director in 1947, the same year he was elected to the Reinhold Board of Directors. In 1948 he was made vice president.

Mr. Belcher was active in civic and church affairs in Darien, Conn., where he made his home, and was chairman of the Promotion Committee of the Associated Business Publications.

SEVEN ARMY PROJECTS LAUNCH SERVICES' NEW HOSPITAL BUILDING PROGRAM



Photograph of rendering shows one of two basic designs developed by York & Sawyer for the Army — the 250-bed hospital on 500-bed chassis

A NEW APPROACH to hospital planning for all the military services was revealed with the announcement by the Army of its plans to begin construction early next year on the first of seven new permanent-type hospitals for posts in this country.

The Army program is part of a new effort to coordinate building programs of all three services through an inter-service committee known as the Munitions Board Task Group for Development of Design Requirements and Construction Standards for Military Hospitals.

Designed for Expandability

The basic decision of the Munitions Board Task Group, beyond the goal of coordination, was the principle of expandability. All the hospitals in the new program are designed for easy expansion beyond their initial capacities.

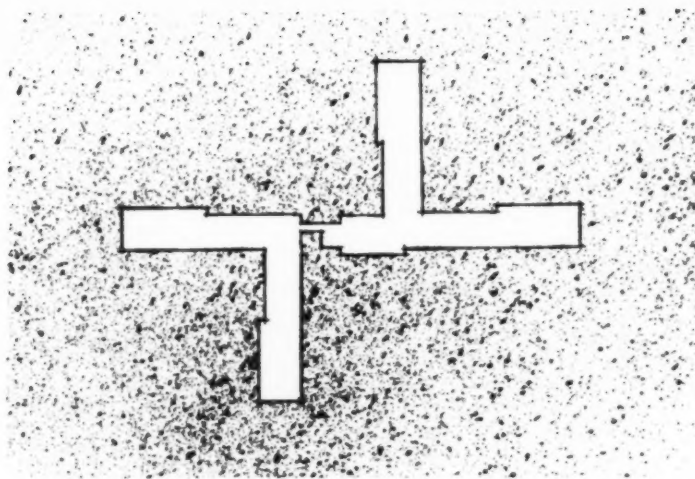
Each of the services was assigned by

the Task Group to develop basic designs for the sizes of hospital it uses most. Thus the Navy got the biggest, the Air Force the smallest and the Army the medium size projects.

The Navy assignment was an 800-bed unit on a 1500-bed chassis; the Army's 250-beds on a 500-bed chassis and 500 beds on a 1000-bed chassis. The Air Force was assigned three sizes of permanent hospitals — 75 on 150-bed, 100 on 200-bed, and 150 on 300-bed — and three sizes of temporary hospitals — 50 on 100-bed, 75 on 150-bed and 150 on 300-bed.

Private Architects Employed

Private architects and engineers play a key role in the new programs. York & Sawyer of New York have developed the prototype designs for the Army hospitals; an association composed of Skidmore, Owings & Merrill, and Hays



Left: sketch shows outline of typical bedroom floor in expansion stage of York & Sawyer 500-1000 bed design; area right of narrow corridor would be constructed in initial stage. Below: plan of typical 34-bed ward (top finger in floor sketch)



Larger of prototype hospital designs for the Army by York & Sawyer is 500-bed project expandable to 1000, to be nine stories high

Seay, Mattern, Mattern, Virginia, for the Navy; and Schmidt, Garden and Erickson, Chicago, and Ellerbe & Co., St. Paul, for the Air Force.

The basic plans establish criteria, space allocations and general layout of the hospitals; the definitive drawings will be adapted to site locations by private architects to be selected.

All the designs will be used interchangeably by the three services as they require hospitals of the various sizes. During the development of the designs, they were studied and criticized at frequent meetings of the Task Group; approval of all the services and of the Armed Forces Medical Policy Council is required on final plans.

The Council also handles the programming end of the effort — selection of sites, construction priorities among the services, etc.

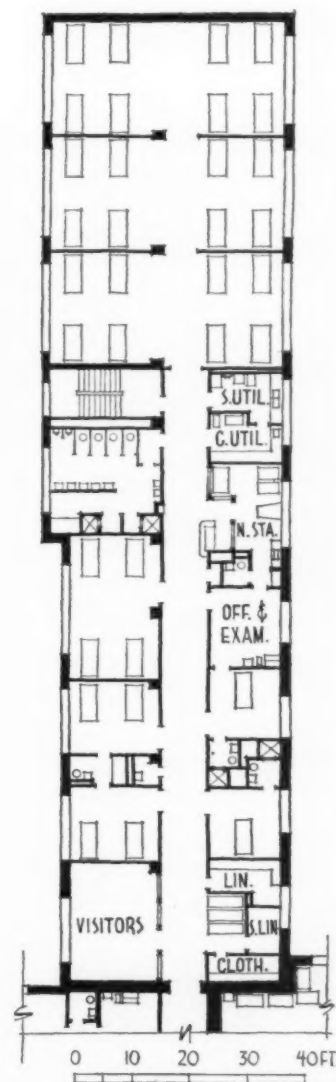
The \$133 million construction pro-

gram authorized by Congress provides \$45 million for eight Army hospitals; \$27 million for three Navy Hospitals; and \$61 million for 24 Air Force hospitals. Navy and Air Force plans are substantially complete and announcement has been awaiting Presidential approval.

Army Announces Sites

Site locations of the Army's seven hospitals were included in the Army announcement, which did not, however, mention the overall program.

The projects, which will add a total of 3200 beds, are planned at the following installations: Fort Benning, Ga., Fort Bragg, N. C., Fort Knox, Ky., and Fort Riley, Kan. — 500 beds expandable to 1000; Fort Belvoir, Va. — 250 beds expandable to 500; Fort Monmouth, N. J. — 200 expandable to 300; Fort Dix, N. J. — 750 expandable to 1000.



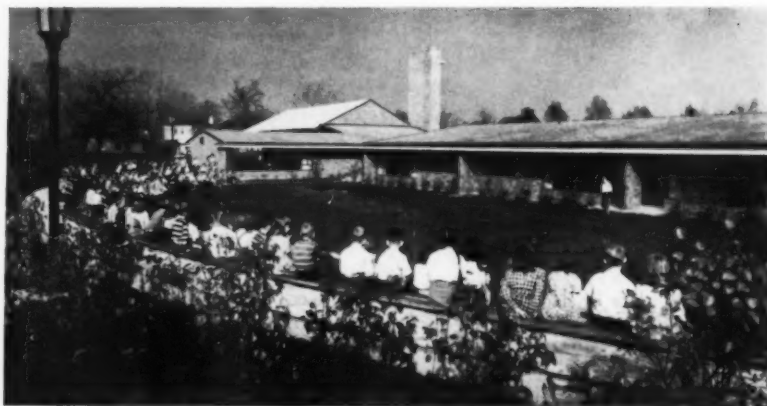
THE RECORD REPORTS

CHICAGO 1952: A.I.A. CHAPTER MAKES AWARDS

ARCHITECTS of the buildings shown on this page received the 1952 Honor Awards of the Chicago Chapter of the American Institute of Architects.

The four buildings were selected for the chapter's annual awards from submissions by 16 firms.

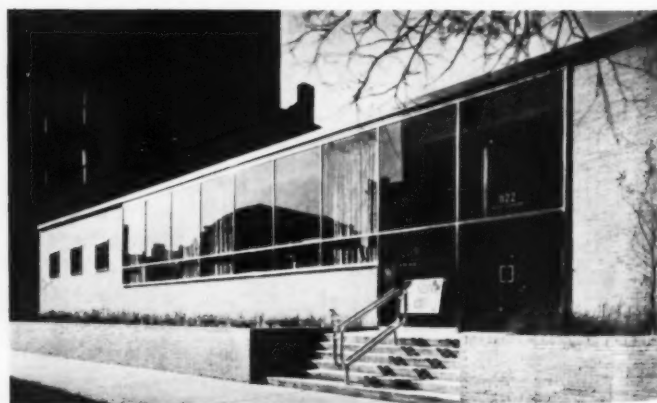
A special Award of Honor was given to Edgar Miller, Chicago artist, "for excellence in sculpture, mural painting and wood carving."



Blythe Park (Elementary) School, Riverside, Ill., Perkins & Will, Architects-Engineers

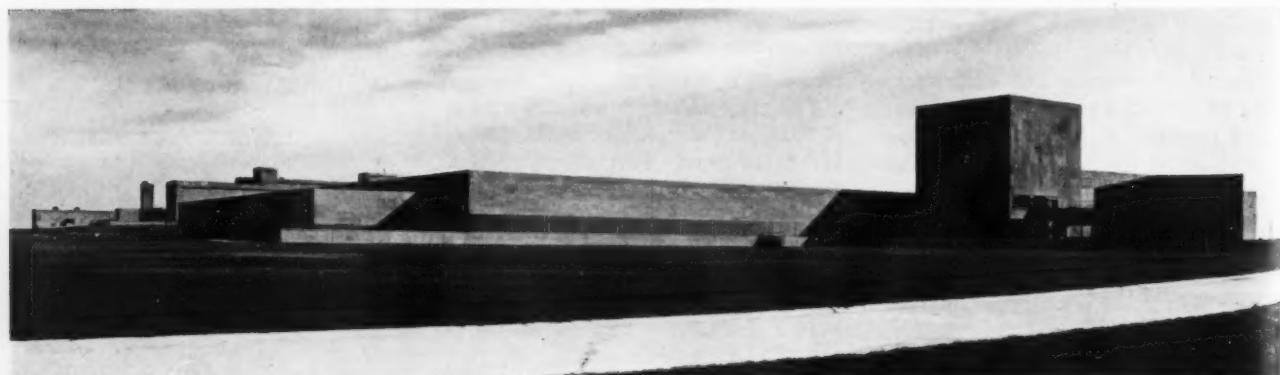


Florsheim Shoe Company General offices and Main Factory, Chicago; Shaw, Metz & Dolio, Architects-Engineers



Illinois Children's Home & Aid Society Administration Building, Chicago; Skidmore, Owings & Merrill, Architects-Engineers. A Merit Award in the Fourth Annual National A.I.A. Honor Awards Program was later bestowed on this building

South District Filtration Plant, Chicago; Paul Gerhardt Jr., Architect for the city of Chicago



THE RECORD REPORTS

NEW METHODS DEVELOPED FOR BLAST-RESISTANT DESIGN

WINDOWLESS STRUCTURES. A Study in Blast-Resistant Design," latest in the series of technical manuals issued by the Federal Civil Defense Administration, applies the principle of dynamic analysis to the problem of designing for resistance to atomic blast. It describes a design procedure suitable for a structure that may be subjected to a single, comparatively heavy impulsive load, in contrast to conventional procedures dealing with the application of static loads or of dynamic loads of long duration and frequent occurrence.

The new methods were developed by Amman & Whitney, Consulting Engineers, of New York. They are based on studies of usable theories made for the Chief of the Army Engineers by a board of consultants including Prof. N. W. Newmark of the University of Illinois and Professors John W. Wilbur, Charles H. Norris and Robert J. Hansen of Massachusetts Institute of Technology.

The manual includes methods of evaluating the forces of an atomic blast, prepared under the direction of C. W. Lampson and J. Meszaros of the Army Ballistic Research Laboratories.

The new methods design a building to survive the blast by yielding, without coming apart. The building goes with the blow, sluggishly, and absorbs it, while the peak of the blast goes past. The building is left somewhat deformed, but otherwise intact. It completely protects occupants and equipment; work can continue.

These methods take advantage of the fact that the pressure of the atomic blast drops to zero in less than a second. It is during that fraction of a second that the blast delivers a blow that makes the ordinary, pre-atomic design loading insignificant.

The theories on which the study is based have been tested experimentally on small-scale models in a shock-tube at Princeton University.

In addition, a few test calculations have been made, using the proposed design methods to analyze elements of bombed Japanese buildings. The behavior of the Japanese buildings under actual atomic blasts checks with the calculated theoretical behavior.

The new principles may have impor-

tant applications in making conventional structures blast-resistant either in whole or in part by the addition of relatively inexpensive design features based on such general principles as these:

1. Structures with integrally-connected basements well anchored to the ground are more resistant to sliding and overturning than structures having shallow foundations.

2. Reinforced-concrete bearing walls and reinforced-concrete partitions rigidly connected to roof and floor increase resistance.

3. The general stiffness of the building can be increased at very small expense by connections between stiffening walls and the floor and roof, such as corner fillets.

Copies of the manual are available for one dollar from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Another recent publication of interest in this field is the report of Armour Research Foundation of Illinois Institute of Technology on research done for the Air Materiel Command of the U. S. Air Force. *A Simple Method for Evaluating Blast Effects on Buildings* can be obtained from AMC headquarters, Wright-Patterson Air Force Base, Dayton, Ohio.

Some of the earlier FCDA publications, available from Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.:

United States Civil Defense (1950), 168 pp. — 25 cents. The national plan for organizing the civil defense of the United States.

The Effects of Atomic Weapons (1950), 456 pp. — \$1.25.

Damage from Atomic Explosions and Design of Protective Structures (1950), 32 pp. — 15 cents.

Fire Effects of Bombing Attacks, Doc. 130 (1950), 48 pp. — 15 cents.

Shelter from Atomic Attack in Existing Buildings, Part I, Pub. TM-5-1 (1952), 53 pp. — 20 cents. Methods for determining shelter needs and shelter areas.

Shelter from Atomic Attack in Existing Buildings, Part II, Pub. TM-5-2 (1952), 26 pp. — 15 cents.

Interim Guide for the Design of Buildings Exposed to Atomic Blast, Pub. TM-5-3 (1952), 34 pp. — 15 cents.

Publications by the American Institute of Architects, available from Publications Order Department, The A.I.A., 1741 New York Avenue N.W., Washington 6, D. C., at 25 cents each:

Civil Defense, the Architect's Part
Defense Measures in Multi-Story Buildings

Defense Measures in Schools

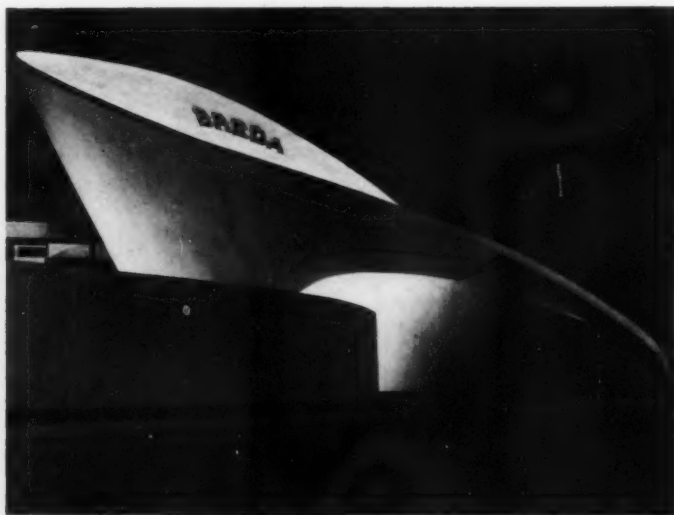
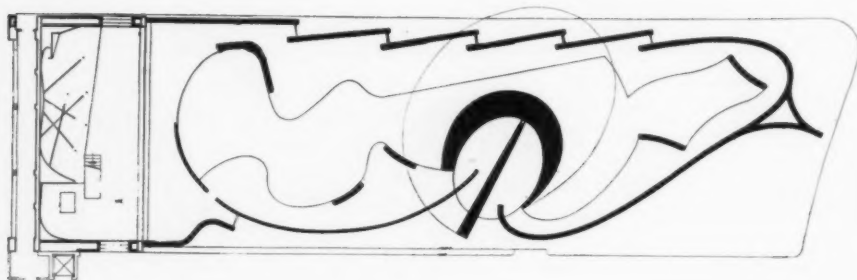
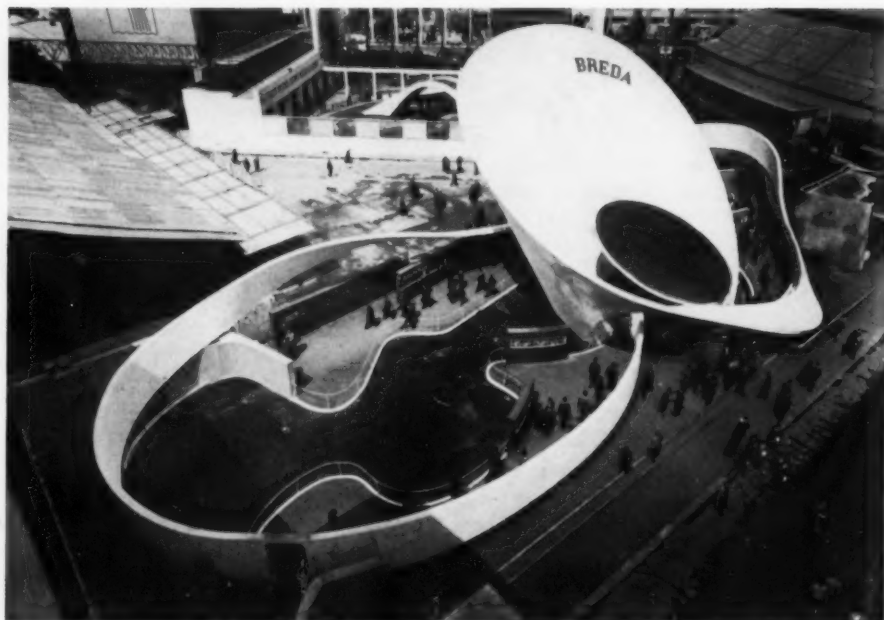


— Drawn for the RECORD by Alan Dunn

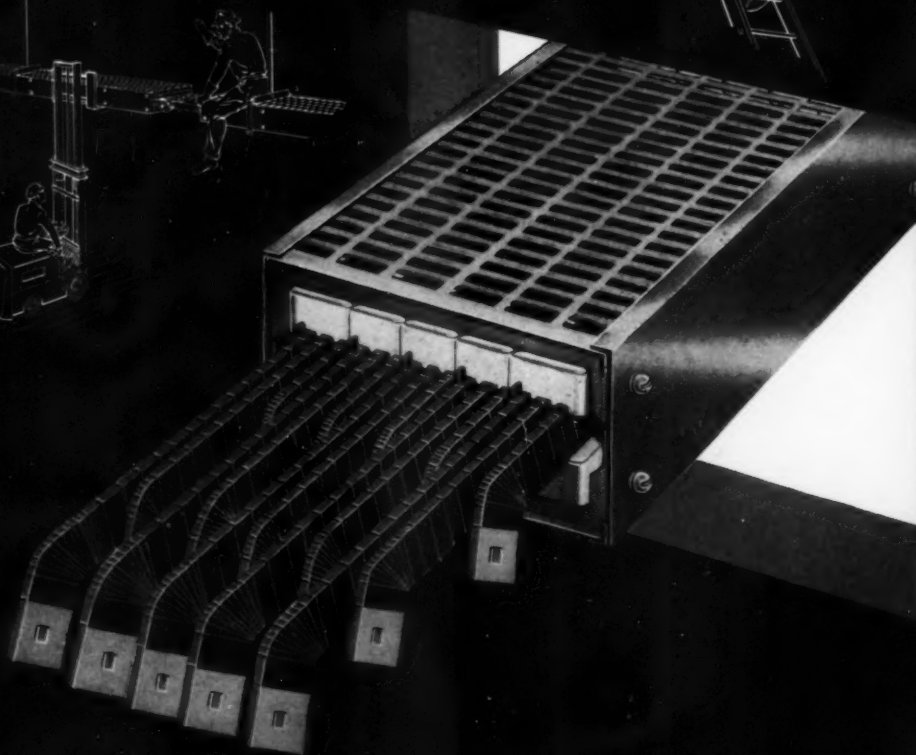
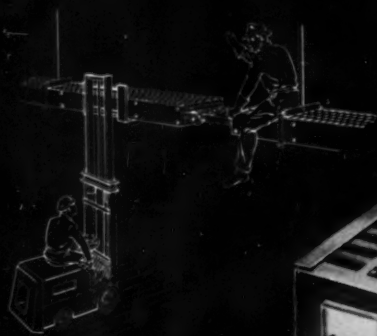
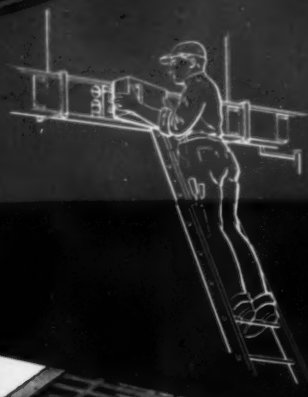
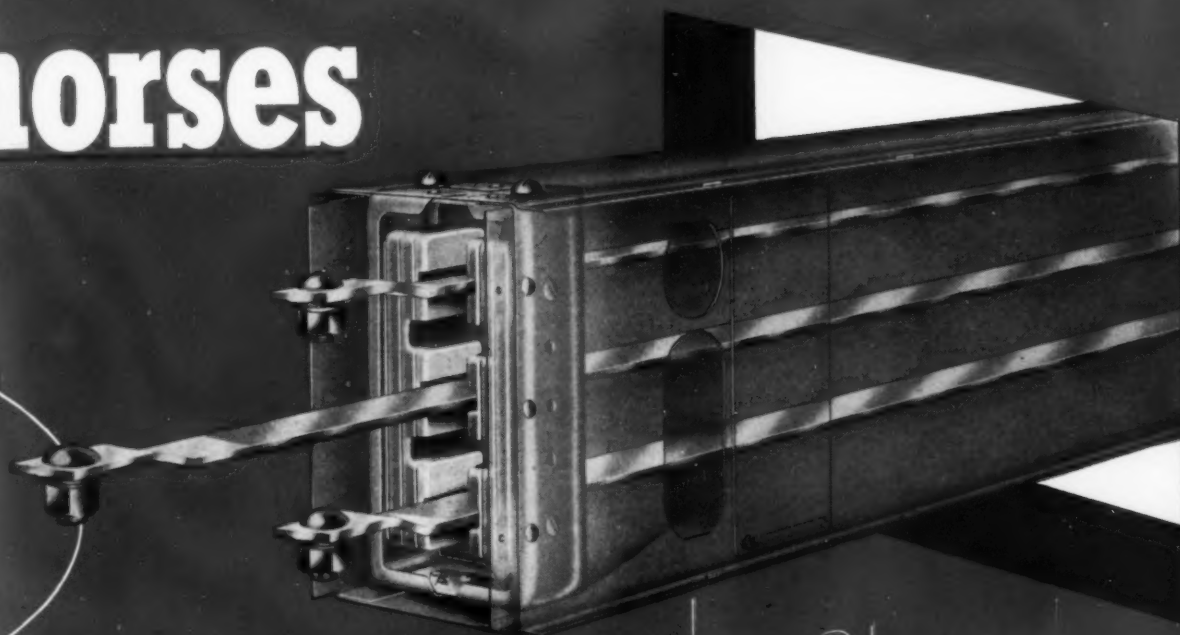
THE RECORD REPORTS

DESIGN FOR INDUSTRY: ARCHITECTURE AS SCULPTURE

THE STEEL AND PLASTER construction shown here was the official exhibit at the 1952 Milan World's Fair of La Breda Company, a 55-year-old Italian industrial concern which was reorganized last year into eight companies coordinated by a holding company. "Yesterday one, today unitary" was the theme the concern asked Architects Luciano Baldesari and his collaborator Marcello Gri-sotti to express in a structure that became a sort of fantastic hyperbole of the traditional "booth" (no samples!). Some 50 tons of steel frame were covered with cross wires and plaster; the cochlea, reaching a height of more than 50 ft with a maximum overhang of about 25 ft, was supported by 40 steel ribs; the "ribbon" was achieved by means of four 35 mm steel reinforcing bars along the four edges of the perimeter and fixed in place by stiff metal diaphragms.



horses



THE RECORD REPORTS

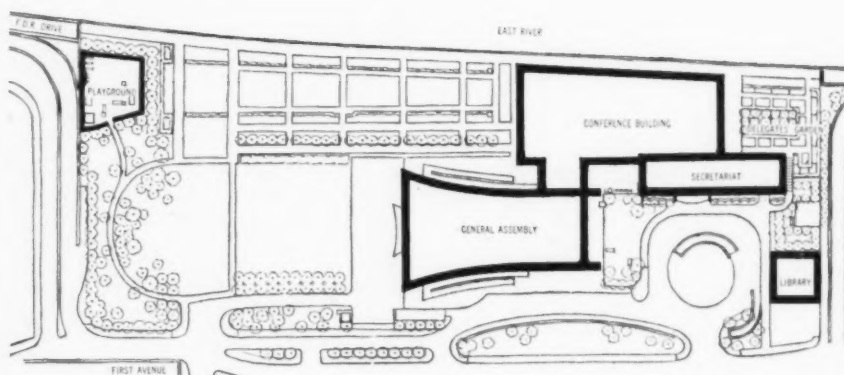
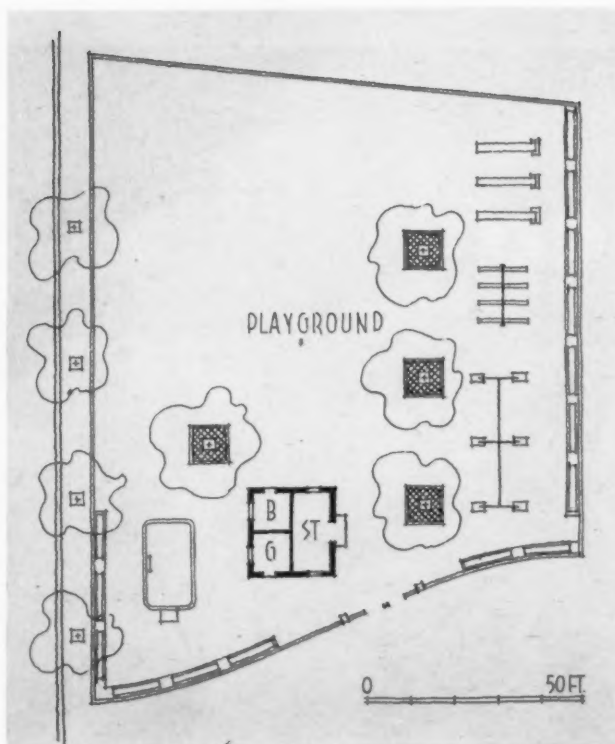
APPROVE FINAL PLAN FOR DISPUTED U.N. PLAYGROUND

PLANS for the playground to be constructed as a part of the site development for United Nations Headquarters have been approved by the Headquarters Planning Office. Construction is to start when the site has been cleared and safe access has been provided, according to Assistant Planning Director Michael M. Harris.

The playground is intended primarily for use by neighborhood children, although it will probably also be used by children accompanying visitors to the U.N. Designed by Gilmore Clarke, who has done many projects for the New York Department of Parks and who will also be in charge of landscaping for the entire U.N. site, the project will be a variation of the standard type of playground for New York parks.

Announcement of acceptance of the Clarke scheme is the latest, but perhaps not the final episode in what has been one of the most spirited of the controversies concerning the U.N.'s permanent home. The dispute began when a group of New Yorkers offered to donate \$75,000 for the construction on the U.N. site of a playground scheme designed by architect Julian Whittlesey and sculptor Isamu Noguchi. This scheme was re-

(Continued on page 366)

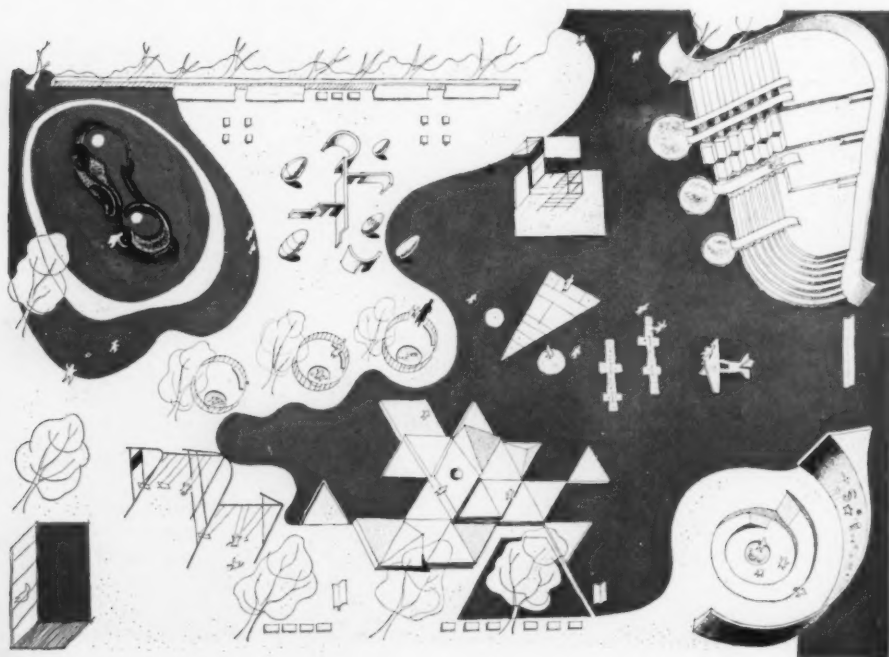


Grotto

Dodger

Jungle House

Climb and Slide



Swings

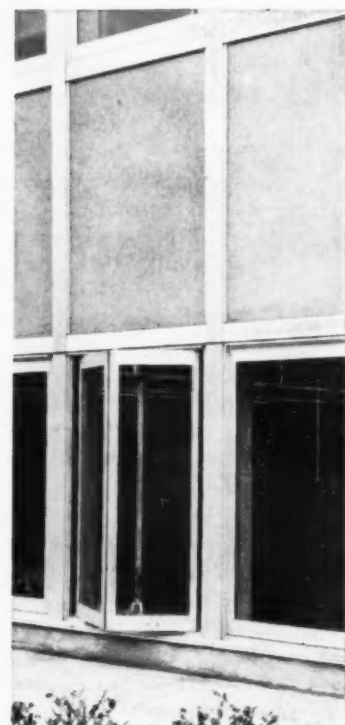
Sand Circles

Mountain

Aeroplane

Arena and Spray Pool

Top: accepted playground plan by Gilmore Clarke is variation of standard New York playground, will be paved with asphaltic concrete. Center: diagram shows location of playground in relation to principal U.N. buildings. Left: rejected scheme by Whittlesey and Noguchi. Designers emphasize that this is a collection of ideas for a playground rather than an actual solution for a specific problem



Chemical Engineering Building, University of Minnesota, Magney, Tusler & Setter, Architects. Roy Jones, University of Minnesota, Advisory Architect. H. M. Leighton Company, General Contractor. The Flour City Ornamental Iron Company, Ornamental Metal Subcontractor, including windows. Alcoa Aluminum used in windows, spandrels, entrance frames and trim, stairway handrails and copings.

THE RECORD REPORTS

Centennial (Continued from page 11)

by his own criteria for the "complete building" of "functional workability and beauty" there is evidence today of a good deal of progress in the design of such buildings as factories, stores, schools and shopping centers.

In the area of community planning Mr. Merrill saw a "major challenge to architects and engineers everywhere. We cannot be satisfied with the quality of our all-too-few new buildings when the majority of our people are forced to live in antiquated structures which have long outlived their usefulness."

Dean Grinter traced the evolution of structural design from the realm of art to the realm of science through the gradual development of methods of analysis, experimentation and — finally — standardization.

These are the tools of science which have produced a fabulous contrast: "The ancient world during three or four millenia produced a few hundred structures that kindle our imagination. We have produced thousands of equally astonishing structures in a generation."

Dean Grinter foresaw an ever increasing influence of analysis and experimentation upon design — in the next century, he suggested, three-dimensional stress analysis may well be as common as analysis of two-dimensional shapes or assemblages is today.

But design has "other faces" — social and economic considerations, esthetic and functional aspects; and "design will therefore always require the exercise of highly developed judgment which is an application of art tempered and guided by scientific knowledge."

Atomic power, plastics, prestressed concrete, heating and ventilating and architectural design: these, according to Professor Voss, are the fields to watch for major developments affecting building materials and methods.

Some of the possibilities: *prestressed concrete* made of low-cost blocks assembled at ground level and prestressed to fabricate larger units — for walls, beams and slabs; *exterior walls* of buildings as massive heating or ventilating ducts with apparatus concentrated in basement and roof areas; *air conditioning equipment* no longer custom-built for each building but made in movable units provided with strategically-located wall shafts and used only when necessary; growing use of *movable partitions* and *design for multiple usage*.



A.S.A. panel on "A New Approach to Cost Reduction in the Building Industry": above: William F. Scheick, William S. Kinne, below: F. M. Hauserman, Arthur Bohnen. Willard Chevalier of McGraw-Hill served as moderator



MORE KNOWLEDGE SEEN AS KEY TO MODULAR ACCEPTANCE

WHAT'S NEEDED TO speed the progress of the modular method is more knowledge about modular coordination in every segment of the building industry, from drafting board to building site.

This was the consensus of the speakers on the panel discussion sponsored jointly by the American Institute of Architects, the National Association of Home Builders and the Producers' Council at one session of the Third National Standardization Conference of the American Standards Association at Chicago September 8.

Members of the panel, a building materials manufacturer, two architects and a house builder, also agreed that experience has proved the modular method can yield significant savings in time and money for any member of the building team who will use it, though savings will certainly be greatest if everybody

connected with a given project uses it.

William F. Scheick, A.I.A., executive director of the Building Research Advisory Board, urged that an effort be made to collect evidence of successful applications of modular as proof of its value for members of the industry who have been reluctant to try it.

William S. Kinne Jr., professor of architecture at the University of Illinois, described the method used to present modular to students not as a separate subject but as one of their tools in design. F. M. Hauserman, president of the Producers' Council and of E. F. Hauserman Company, and Arthur Bohnen of the National Association of Housing Officials and the National Association of Real Estate Boards, testified to their own experiences with the economies of modular and their belief in its potential for the industry.



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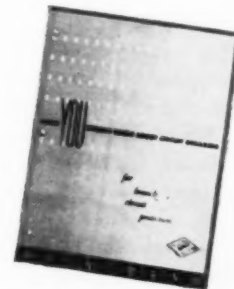
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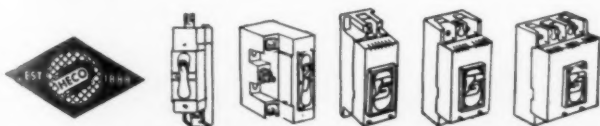
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NEWS FROM CANADA by John Caulfield Smith

Prestressed Concrete Used For Municipal Grandstand

A LINEAL PRESTRESSED CONCRETE grandstand believed to be the first of its kind in North America is under construction as a civic project at Sherbrooke, Que. Cost is estimated at \$255,000.

Frames of the grandstand are precast, as are bleacher seats and roof slabs. Both seats and slabs are produced at Cap St. Martin, Que., then shipped to Sherbrooke.

Architects are Audet, Tremblay & Audet; consulting engineers are Crepeau, Cote & Lemieux. Both are Sherbrooke firms.

Make Awards Next Month in Second Massey Competition

THE SECOND NATIONWIDE COMPETITION for the Massey Medals for Architecture will end next month with announcement of the winners at the opening of the exhibition of entries in the National Gallery in Ottawa. Closing date for receipt of entry forms is October 6.

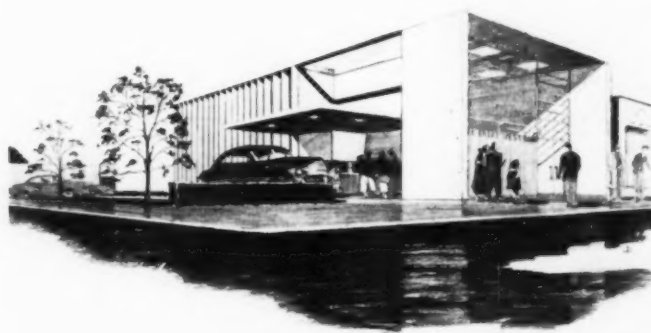
The initial competition sponsored by the Massey Foundation to encourage national recognition of architectural distinction and to stimulate public interest in architecture was held in 1950. It was announced then competitions would be held every two or three years.

The three-man jury has been chosen according to a ruling that two members must be Canadian architects, the third a nonresident architect. John B. Parkin of Toronto and John A. Russell, director of the School of Architecture of the University of Manitoba, are the Canadians; Pietro Belluschi, dean of architecture and planning at Massachusetts Institute of Technology, is the non-resident.

Silver medals will be awarded to the architect or firm whose work is considered most distinguished in each of 15 categories; a gold medal will be presented for the work found outstanding among all the entries.

In line with the effort to have the competition serve to educate the lay public to the architect's service, the winning entries and some others will be sent on a nationwide tour. Rt. Hon. Vincent Massey, C. H., Governor General of Canada, will be present to open the exhibit November 21.

(Continued on page 32)



Above: Drive-In Bank, North York, Ont., is part of suburban Toronto's Craig Plaza Shopping Development. Architects, Venchiarutti & Venchiarutti



Ken Bell

"Trend House," above and right, in Thorncrest Village near Toronto, was designed for the British Columbia Lumber Manufacturer's Association to display advantages of wood as building material. Architects: Sharp & Thompson, Berwick, Pratt, Frederick S. Brodie, Associate



Below: first application in eastern Canada of the Youtz-Slick lift-slab technique was employed in plant for Isotope Products, Ltd., Oakville, Ont. Architects for the project were Crawford & Hassig

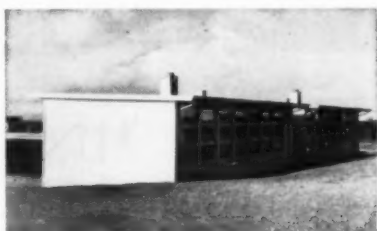
Gilbert A. Milne



Poole, engineer in charge of construction, plywood offered the simplest, least expensive method for obtaining the smooth surfaces. In fact, because of its smooth, neat appearance, the concrete required no further finishing once forms were stripped. Exterior PlyForm panels were re-used up to eight times in forming the five frames. The building was designed by Engineer Leslie E. Poole; contractor: H. M. Hocken, Portland.

Portable Units Help Solve Schoolroom Shortage

To solve pressing classroom shortages due to shifts in population, school systems in many communities are turning to portable classrooms as a quick and economical solution. In Tacoma, Washington, 60 are used by the city's schools. Thirty-five are of lightweight plywood construction; ten were built last year by E. Goettling & Sons, general contractors, from revised designs by Mock and Morrison, architects.

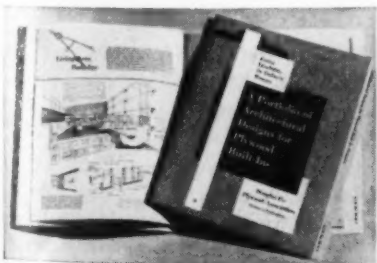


"We've been using plywood for four years," says James Hopkins, assistant superintendent of schools in charge of construction. The portable schoolrooms are fully as well built as the average house and we expect them to be good for 50 years. Plywood construction is lighter and gives maximum bracing strength—a must in movable buildings."

Each building is 24'x36'. Plywood is used for subfloors, roof sheathing, paneling, built-ins and exterior siding. Modular design, based on standard plywood panels, helps speed work and cut costs. Plywood not only makes a sounder, tighter building, but it presents a clean, modern appearance—a far cry from the unpleasant "temporary look" of other similar structures.

Design Portfolio Available

A portfolio of prize-winning designs for plywood built-ins is now available to architects, designers and builders. The booklet contains over 50 designs judged best in the "Better Living Home" architectural contest. For free copy write Douglas Fir Plywood Association, Tacoma 2, Wash.



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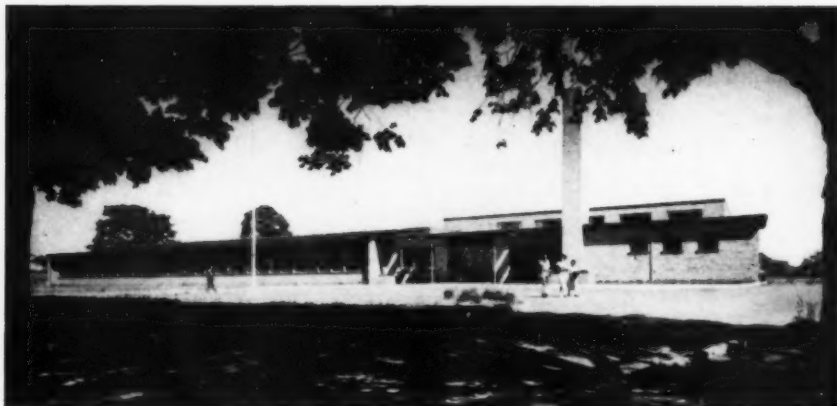
THE RECORD REPORTS

CANADA

(Continued from page 28)

August Contract Awards Off, But Housing Shows Increase

Total value of construction contract awards for August was \$175.7 million, \$11.8 million below the figure for the same month last year. The residential



Panda

Markdale, Ont. High School, architects were Shore & Moffat, Toronto



Clinical Center National Institutes of Health
Bethesda, Maryland



O'Connor Hospital San Jose, Calif.
Maguolo & Quick, Frank T. Georgeson, Architects - Engineers



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category was the only one to reflect an increase; at \$41.3 million it was 6.1 per cent over the August 1951 level.

The cumulative eight-months total as reported by MacLean Building Reports Ltd. also shows a decrease—\$472.8 million. The eight-months figure for 1952 was \$1219.9 million.

Engineering Students Honored For Papers on Construction

Leonidas Zariff, a recent honor graduate in civil engineering at McGill University, has received the top award in this year's Canadian Construction Association competition for the best thesis on construction subjects prepared by senior engineering students at Canadian universities.

The subject of Mr. Zariff's thesis was the Peribonka Cableway, a specialized heavy-duty cableway set up at a cost of \$500,000 to speed construction of a hydroelectric power development at Chute du Diable on the Peribonka River in Quebec's Lake St. John area.

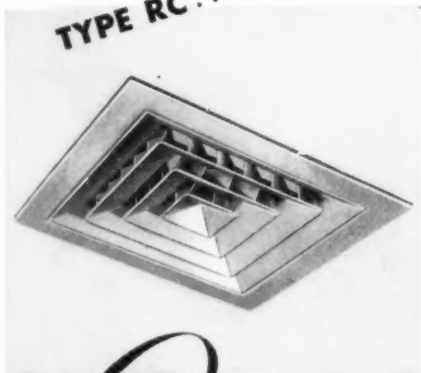
Purpose of the Association's competition is to stimulate interest among engineering students on construction problems in the hope of developing new techniques.

In addition to Mr. Zariff's prize of \$150 and an engineer's handbook, awards of \$50 each and books were made to the following students:

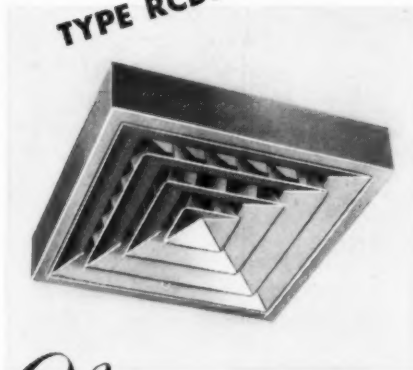
R. A. MacDonald, University of British Columbia—The Erection of the Salmon River Bridge; J. M. Crook and O. K. C. Mang, University of Saskatchewan—Prevention of Frost Heave in Curling Rinks; J. H. Dick and W. A. Johnson, University of Manitoba—Investigation of Ground Movement;

(Continued on page 34)

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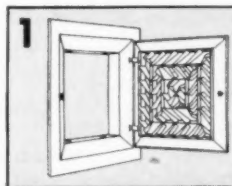
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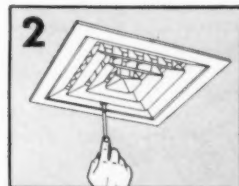
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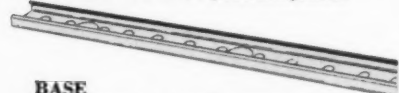
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FEATURES**



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PLUGMOLD 2000

WIREMOLD'S *New*
multi-outlet system

THE WIREMOLD COMPANY
Hartford 10, Connecticut

THE RECORD REPORTS

CANADA

(Continued from page 32)

Glen A. Weaver, University of Toronto — Winter Concreting.

Also N. D. Garbutt, Queen's University — Prestressed Concrete for Culvert Construction; P. G. Beaulieu, Ecole Polytechnique de Montreal — Application de la Méthode de Distribution des Moments Encastres au Calcul d'un Cadre Rigide; B. B. Blais, Université Laval — Caserno pour Logement de Troupes-Citadelle, Quebec; J. H. Whalen, University of New Brunswick — The Duplessis Bridge.

News Notes

- Ramsay Traquair, emeritus professor of architecture of McGill University, died in the Memorial Red Cross Hospital at Guysborough, Nova Scotia, an institution he had a large share in creating after his retirement in 1939. Professor Traquair had been known for archaeological and antiquarian as well as architectural interests.

- Seven massive metal doors, Canada's gift to the United Nations, are being installed in the main entrance to the new General Assembly Building at UN headquarters in New York. The doors are simple in design, made of an untarnishable alloy with four glass panels set horizontally in each door. Beside each panel is a plaque incorporating figures symbolizing truth, peace, justice and fraternity. Ernest Cormier, Montreal architect, designed the doors.

- Construction workers are averaging 21 per cent better pay this year than last, according to Bureau of Statistics reports. On June 1 they were getting 142.3 cents an hour compared with 125.9 cents on the same date last year. Weekly wages of construction workers averaged \$58.91 as of June 1, compared with \$53.70 for factory workers.

- The interest rate under the National Housing Act is 5¼ per cent on new joint loans approved as from September 1. The previous rate, established in June 1951, was five per cent.

Interest rates on new loans of other types under the Act are also being in-

(Continued on page 36)

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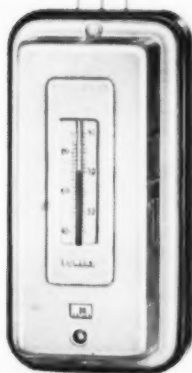
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(a68)

THE RECORD REPORTS

CANADA

(Continued from page 34)

creased by one quarter of one per cent. This increase, according to Minister of Resources and Development Robert H. Winters, reflects the upward movement in the general interest rate structure.

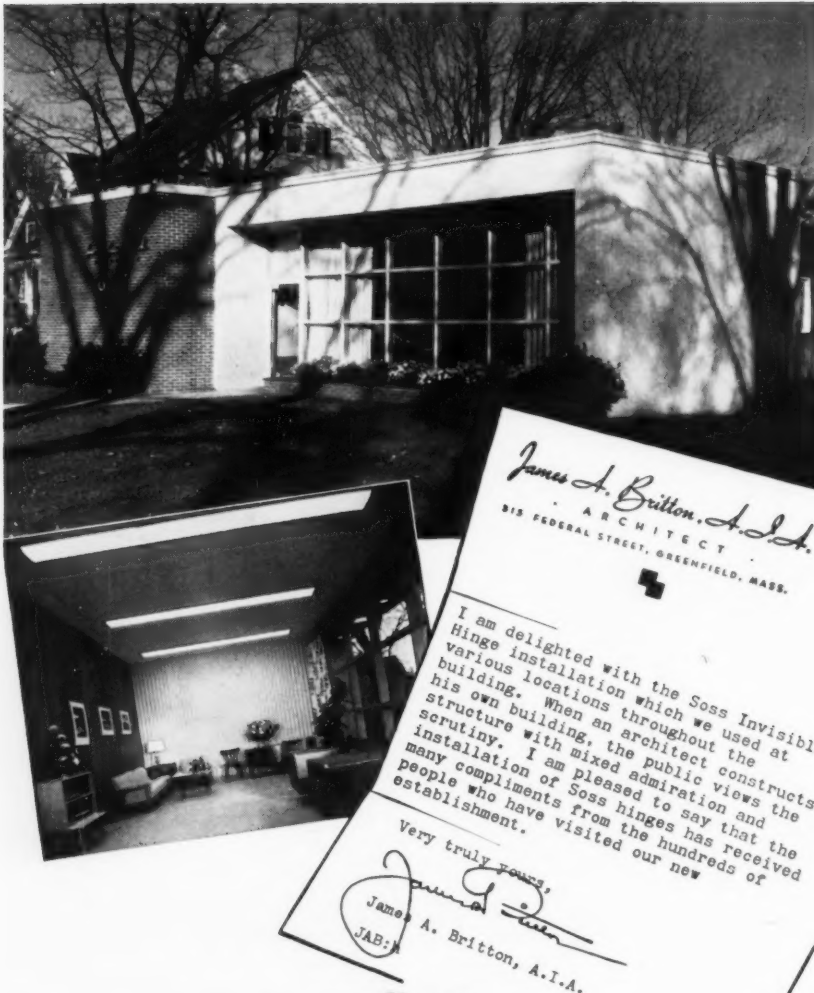
Provision is made in the Act for the interest rate on new loans to fluctuate in accordance with changes in the interest yield on long-term Government bonds; there has been an increase in such interest of about one half of one per cent during the past year.

• Doubt that current training and immigration programs for construction workers are sufficient to look after Canada's needs was expressed in a recent address by P. G. Wilmut, president of the Canadian Construction Association, before the Builders' Exchange at Kingston, Ont.

Calling on contractors to provide employment opportunities for apprentices in greater numbers, Mr. Wilmut stressed that apprenticeship programs pay off.



Dr. E. G. Faludi, managing director of Town Planning Consultants Ltd., has been appointed planning consultant by the Oakville-Trafalgar (Ont.) Planning Board. Ford of Canada Ltd. is building a giant industrial plant in Trafalgar Township, on the outskirts of Oakville, and more new manufacturing concerns and a population increase of upwards of 20,000 are expected to create planning problems for an area which has been till now largely rural.



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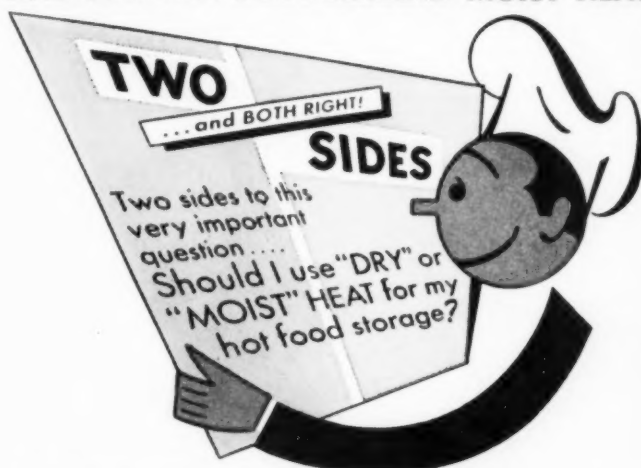
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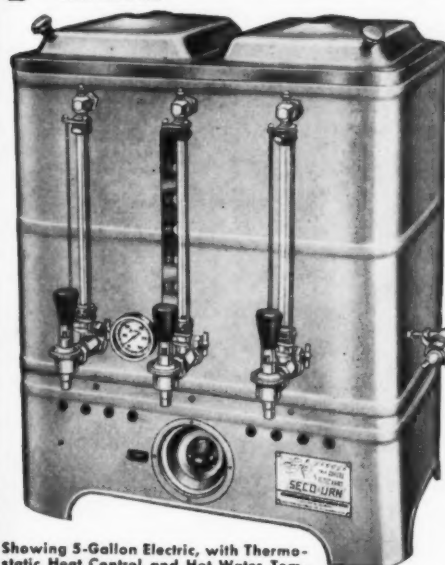


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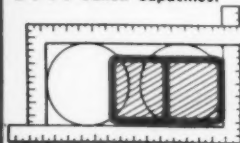
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FRANK CREEDON NAMED TO HEAD MILITARY BUILDING

FRANK R. CREEDON, who has been director of the Facilities and Construction Bureau of the National Production Authority, has been named to the newly-created post of director of installations for the Department of Defense.

PROJECTS APPROVED UNDER THE HILL-BURTON HOSPITAL PROGRAM

Fiscal Year	No. of Projects	Estimated Cost		Additions	
		Total Cost	Federal Share	Hospital Beds—Health Centers	
1948	450	\$283,511,131	\$ 74,782,018	25,541	51
1949	367	275,841,588	74,929,305	18,024	48
1950	537	442,919,409	149,918,909	26,931	85
1951	266	239,617,921	84,874,002	12,200	50
1952	215	185,670,061	73,488,523	9,898	57



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The latest consolidated summary prepared by the Division of Hospital Facilities of the U. S. Public Health Service, the agency within the Federal Security Agency which administers Federal construction funds under the Hill-Burton program, reports the picture as of July 31 as shown in table above

The office was established in an amendment to the 1952 military public works authorization bill to provide a civilian construction expert to "maintain direct surveillance over the planning and construction by the military departments of all public works projects."

Mr. Creedon, who will have a small staff with construction experience, will report directly to the Secretary of Defense on status, progress and cost of all military public works projects.

(Continued on page 322)

Regulation X Suspended; Commercial Curbs Ended

SUSPENSION OF REGULATION X, the two-year-old curb on housing credit, and full suspension of Federal Reserve Board restrictions on commercial construction loans, became effective September 16.

As the Bureau of Labor Statistics reported seasonally-adjusted housing starts in August fell below the 1.2 million figure for the third successive month, Housing and Home Finance Agency announced down payments on home loans aided or made by the Federal government would revert to the original statutory limitations; and the Federal Reserve Board announced suspension of Regulation X on conventional residential credit as well as full suspension of any restrictions on conventional lending on real estate.

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Booklet B-4162 covers Westinghouse Power Centers in detail. Booklet B-4045 discusses various types of plant distribution systems wherein power centers offer maximum advantage. Contact your Westinghouse Representative or write: Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

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POWER CENTERS



REQUIRED READING

MODERN ARCHITECTURE IN MEXICO



W. Reuter



Guillermo Zamora

Above: church in Monterey — Enrique de la Mora, architect; Herbert Hofman, sculptor. Top right: house — Victor de la Lama, architect. Right: Mexico City office building — Juan Sordo Madaleno & Augusto H. Alvarez, architects

Mexico's Modern Architecture. By I. E. Myers in cooperation with The National Institute of Fine Arts of Mexico. Architectural Book Publishing Co., Inc. (112 W. 46th St., New York 36, N. Y.) 1952. 8½ by 10½ in. 264 pp., illus.

The vitality and quality of the work being done by contemporary architects in Mexico is well evidenced in this book. For readers who have never been to the country, and whose only previous knowledge of its modern buildings has come through earlier books, such as Esther Born's 1937 survey, both the quality and the quantity of the buildings shown here will perhaps come as a revelation. In the space of little more than 25 years, since the first buildings that could in any sense be called modern were built, Mexico seems to have evolved a body of architecture which on the whole invites comparison with contemporary building anywhere, including its more publicized neighbors to the south.

The idiom of modern building in Mexico may be largely traced to the International Style of the 1920's. In this, of course, it resembles much of the work done not only on the European continent, but also in the United States,

Great Britain or, for that matter, Hong Kong. In most of these structures the devices associated with this source predominate; widespread use of materials such as concrete and glazed tile for exteriors, large expanses of glass, clean unbroken lines and flat surfaces, a machine-like quality of precise formality and an avoidance of clutter which amounts almost to bareness. In these contemporary Mexican houses, offices, hospitals and schools, as in their siblings over the world, there is reflected everywhere the theories and practices of architects such as Le Corbusier, Mies, Gropius and Neutra. None of this is to say that the work being done in Mexico is in any way derivative or mere copy-book modernism. Although the standard elements are all employed, they are carefully thought out and imaginatively applied. Native and natural materials help give them a flavor which is somewhat distinct, if not unique. And, most important, the majority of the buildings pictured in this book show a boldness and directness which is admirable. In the very scope of some of the projects shown, such as the President Miguel Aleman

Multiple Dwellings, the Benito Juarez Dwellings and the giant University City project, it has given the United States a model to aim for.

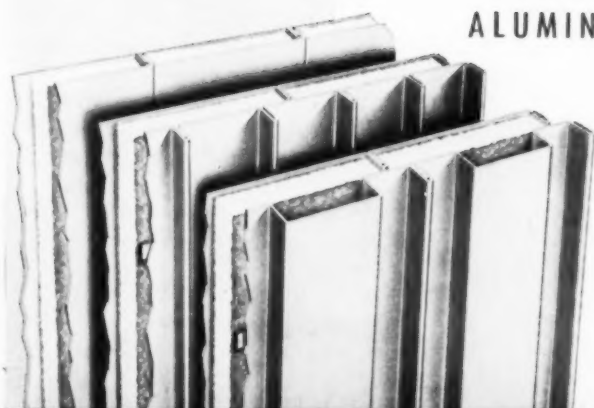
As a pictorial catalog of these buildings, Mr. Myers' book serves a useful function and will be a welcome addition to the architect's or student's library. The illustrations are, for the most part, large and clear and are seemingly well-chosen. With the plans it is a different matter. No attempt at standardization has been made, and, while this is by no means an absolute necessity, some of them tend to be a little confusing. It seems to me, too, that the value of the book would have been enhanced if a more convenient and complete identification of each building had been furnished, including dates and — at least in the case of private houses, apartments and commercial buildings — street locations. As it is, a certain amount of confusion exists, particularly when similar houses follow each other in the presentation.

More serious exceptions can be taken to some aspects of the textual material.

(Continued on page 48)

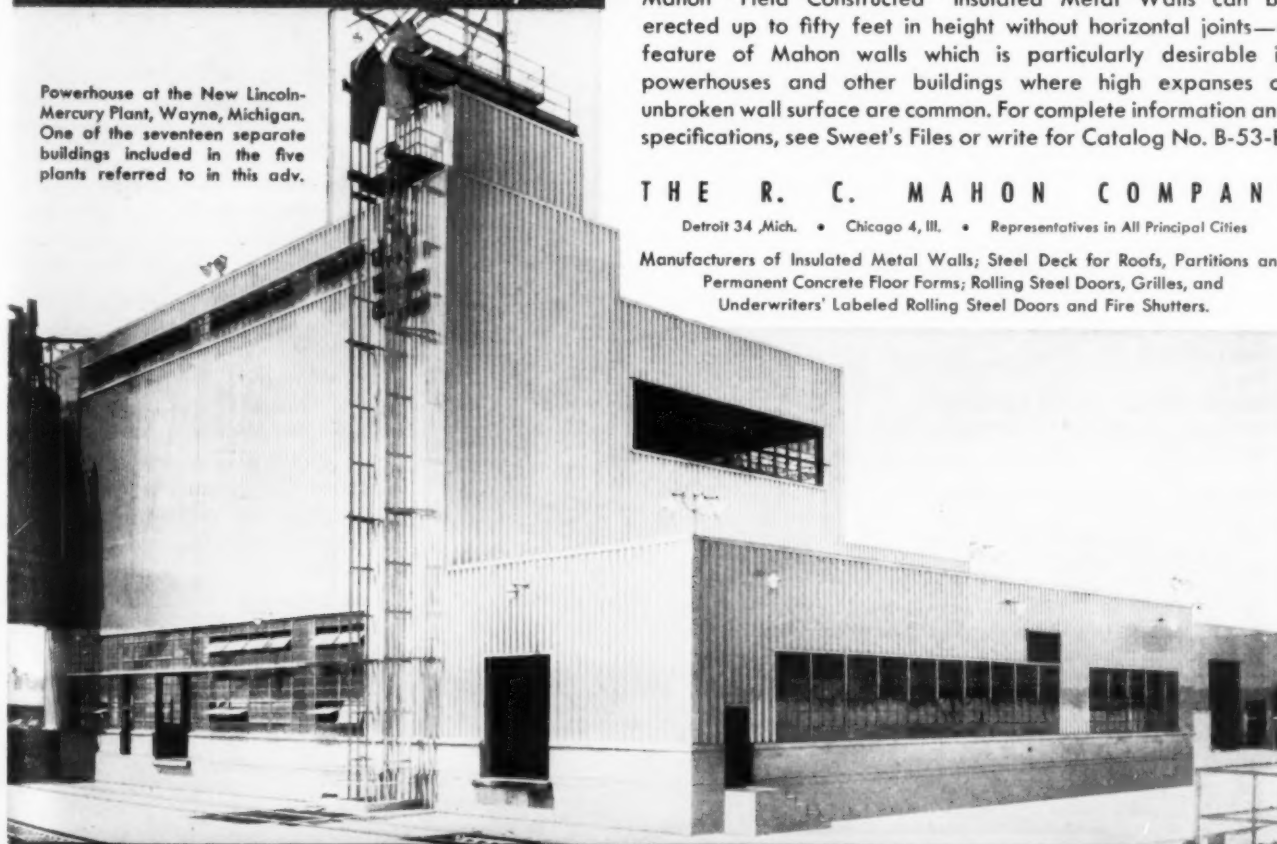
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REQUIRED READING

(Continued from page 46)

As is sometimes the case with such books, the organization often seems a little choppy. This is accentuated because little effort is made to tie the pictorial matter and the textual sections together. Mr. Myers' historical and sociological sketches are adequate as far as they go, but often seem too incomplete to be as valuable as they might have been. This is particularly true of his chapter on the modern movement itself, which just skims the surface. A fuller history than the author's is given in the foreword to the book by Enrique Yanez. Mr. Myers refers to pioneer buildings by Jose Villegran Garcia, Juan O'Gorman and others, but nowhere are these structures pictured. Only later works by these architects have found their way into the book. It is true that Mr. Myers has intended neither a sociological nor a historical work, but a book about modern building in Mexico must furnish a minimum of historical material—both textual and pictorial—if it is to be comprehensible, and the material offered here seems to me to be below that expected minimum. Space limitations alone cannot be argued as a complete extenuation of the omissions since Mr. Myers has found space for generalizations on the nature of architecture (sometimes, but not always, a little platitudinous) and other subsidiary comments which are not particularly integral to the sort of book he has written.

The book is printed in both Spanish and English, and this is certainly in itself to be commended. However, the Spanish text is printed completely in italics, and even though it is comparatively short, reading is made a little difficult. The limiting of descriptions of the individual buildings to English only is questionable.

Despite these shortcomings, it is good to have a work such as this available to supplement earlier material. It deserves and will probably find a ready audience; and in so doing, it will perform a valuable service both for the reader and for the leaders in Mexico's architectural revival.

A BACKGROUND FOR STRUCTURAL DESIGN

Structure in Building, By W. Fisher Cassie and J. H. Napper. The Architectural Press
(Continued on page 400)



ARCHITECTURAL RECORD

RIO SPORTS CENTER: A PROGRESS REPORT

Raphael Galvão, Pedro Paulo Bastos, Antonio Dias Carneiro,

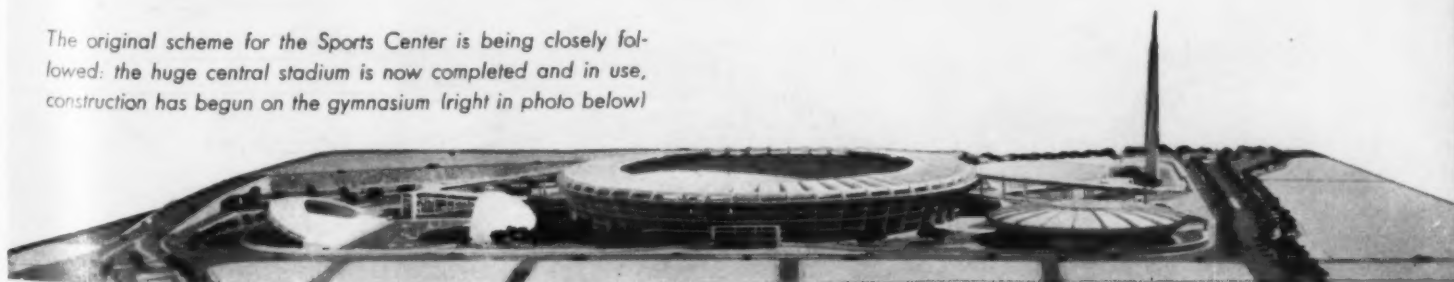
RIO DE JANEIRO, BRAZIL

Orlando Azevedo, Architects

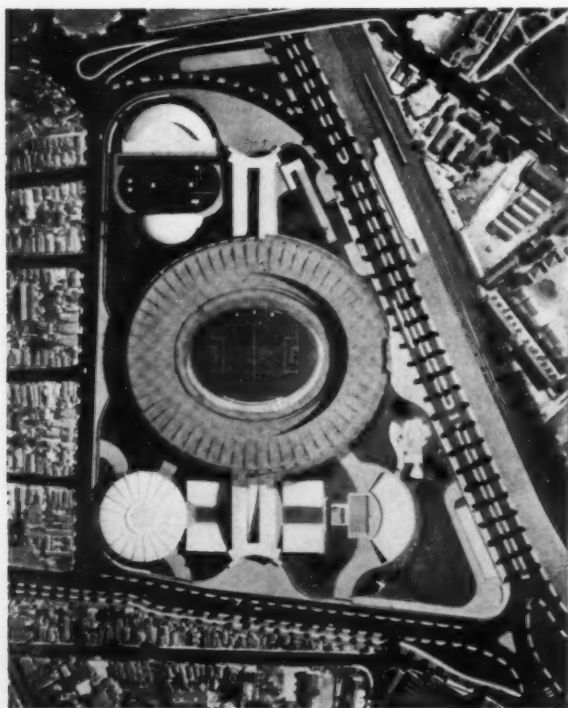
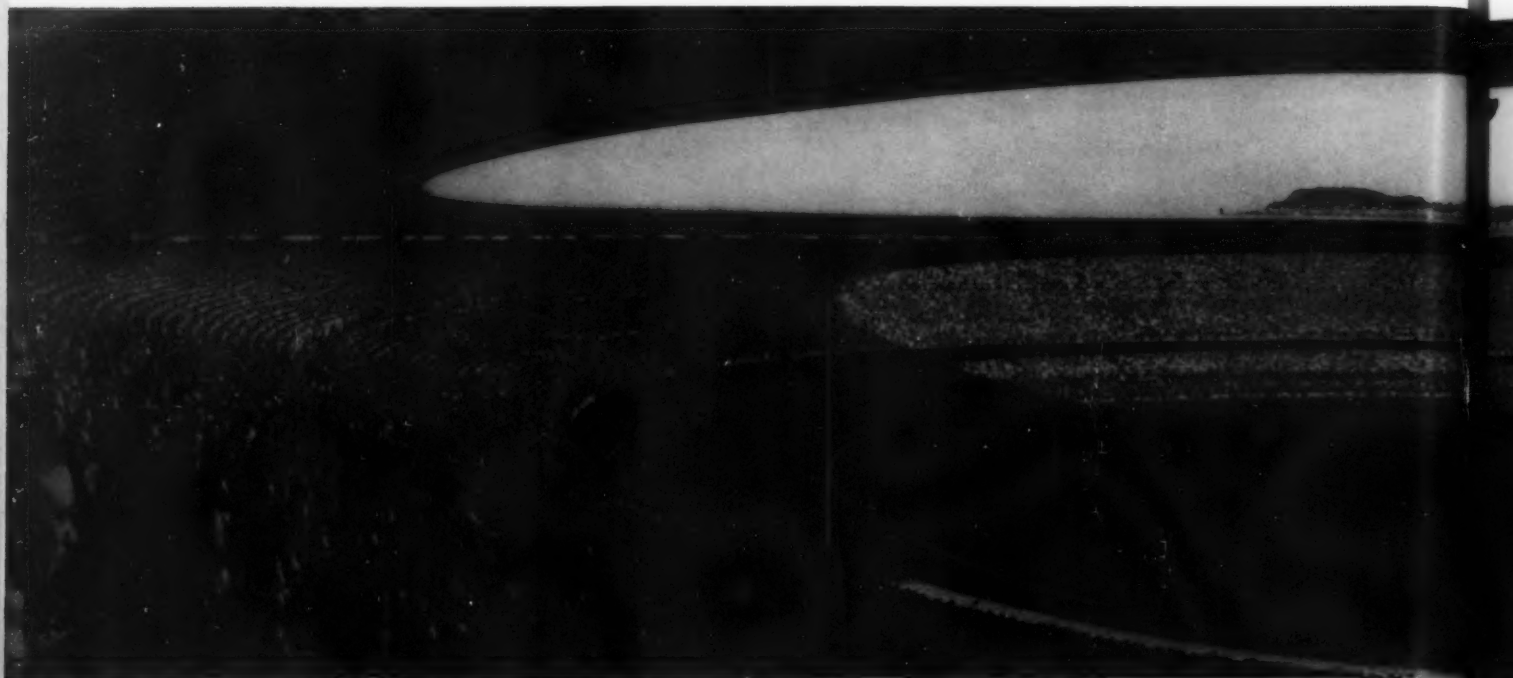
THIS MONUMENTAL PROJECT for a sports center in the heart of Rio enters the second stage of construction with the completion of its enormous 150,000-person capacity stadium, and the beginning of foundation work for the second largest unit, an enclosed gymnasium which will hold 35,000 people.

* First presented in the August 1949 issue of ARCHITECTURAL RECORD, the project has been underway since early 1948. When entirely completed, the center will also include a swimming pool, tennis and basketball courts, a velodrome, a rifle range, a music shell, a track field and a children's playground.

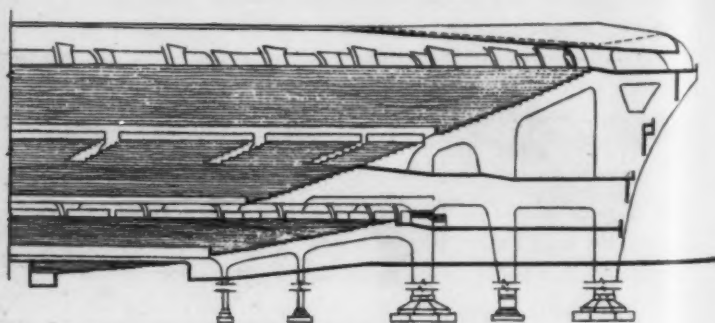
The original scheme for the Sports Center is being closely followed: the huge central stadium is now completed and in use, construction has begun on the gymnasium (right in photo below)



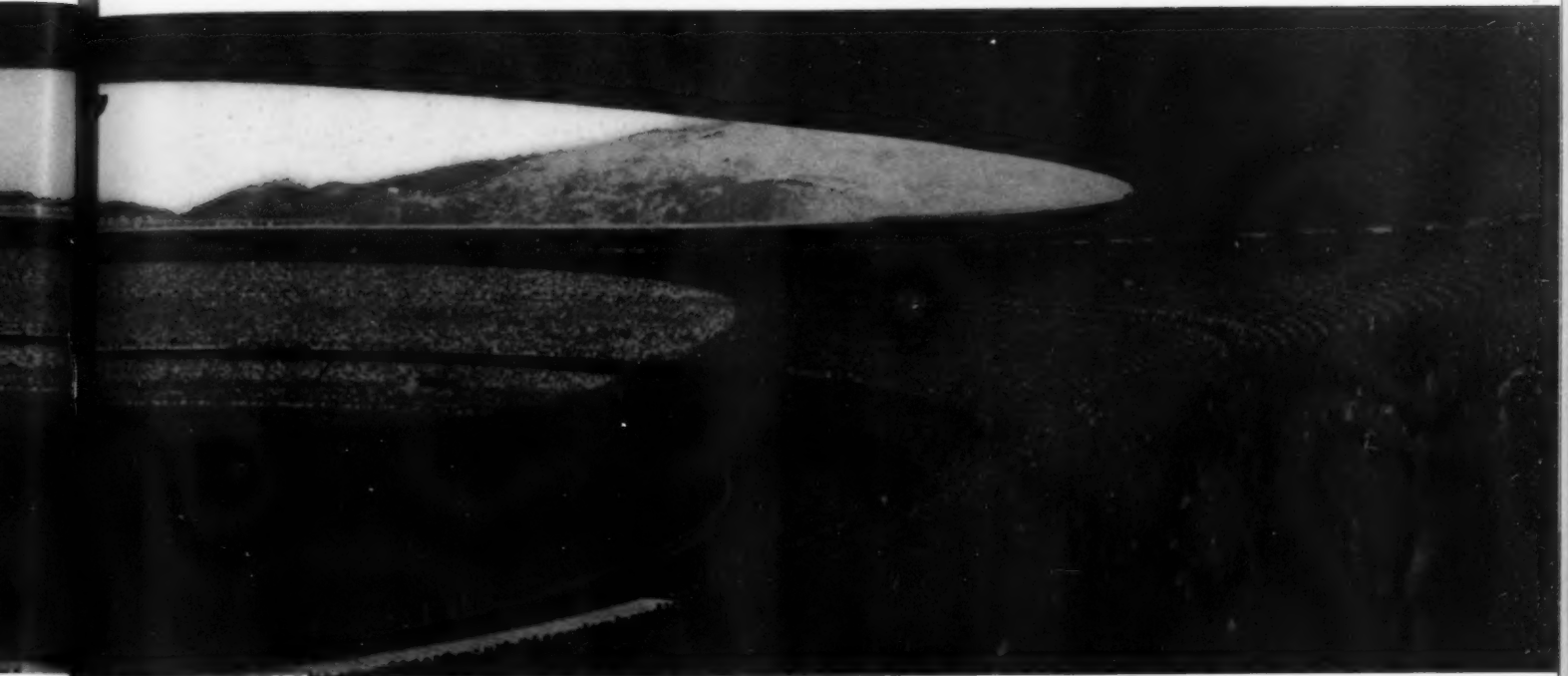
The careful calculations which went into the planning of the stadium have more than proved themselves, now that the structure is in use. Good visibility is provided for each of the 150,000 spectators, ramps are wide enough to empty stadium in 15 minutes. The roof is cantilevered over 98 ft



This first unit of what will eventually be a very complete sports center might be noted, aside from the fact that it has proved to be quite comfortable and convenient, for the lean, pared-down design of its reinforced concrete structure. The countless studies which preceded its construction led to a reliance on proportions



The circular stadium will form the dominating central element of the sports center. Other units will have simple plastic forms suited to their uses. Stadium section (above, right) shows use of several levels for horizontal circulation and for convenient placement of concessions, toilets, athletes' lockers and sleeping quarters, administration and other facilities



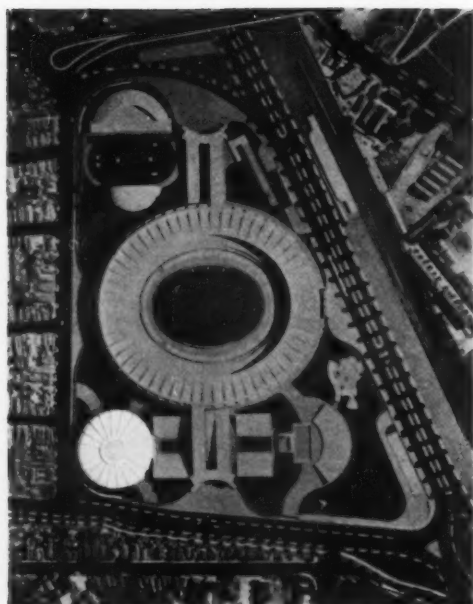
and the repetitive value of the supports to produce a light, elegant, almost festive quality well suited to its purpose. The same approach is being used in the design of each of the projected units, along with studies of their relationships to each other. The project will be completed by Galvão, Bastos and Azevedo, due to the

recent untimely death of Antonio Dias Carneiro, one of the original team of architects.

Structural design for the stadium was the responsibility of Paulo Fragoso, Noronha, Baungart, and Costa, Engineers. Engineering for the remaining structures will be done by the architects.

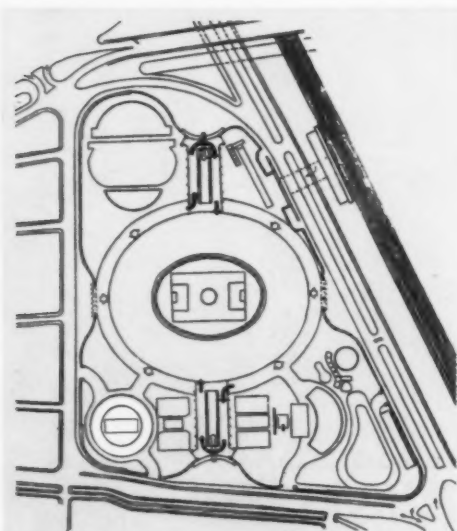
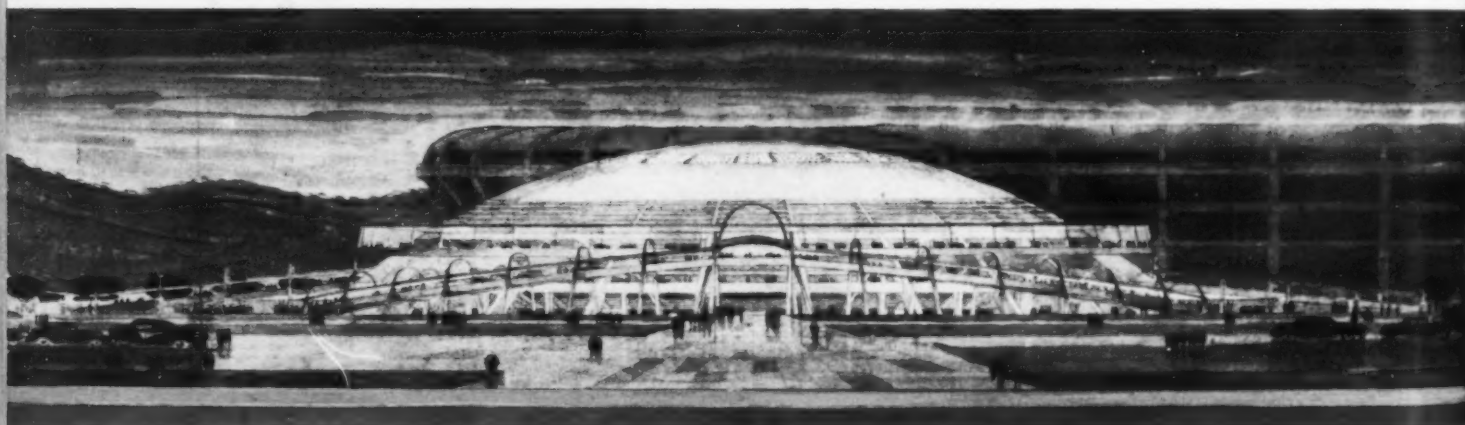


The stadium is 23 meters high (75.5 ft). Its enormous size is quickly apparent when contrasted with the other buildings in the photo at right



Gymnasium for 35,000 Spectators, Second Largest Unit of Sports Center, Is Under Construction

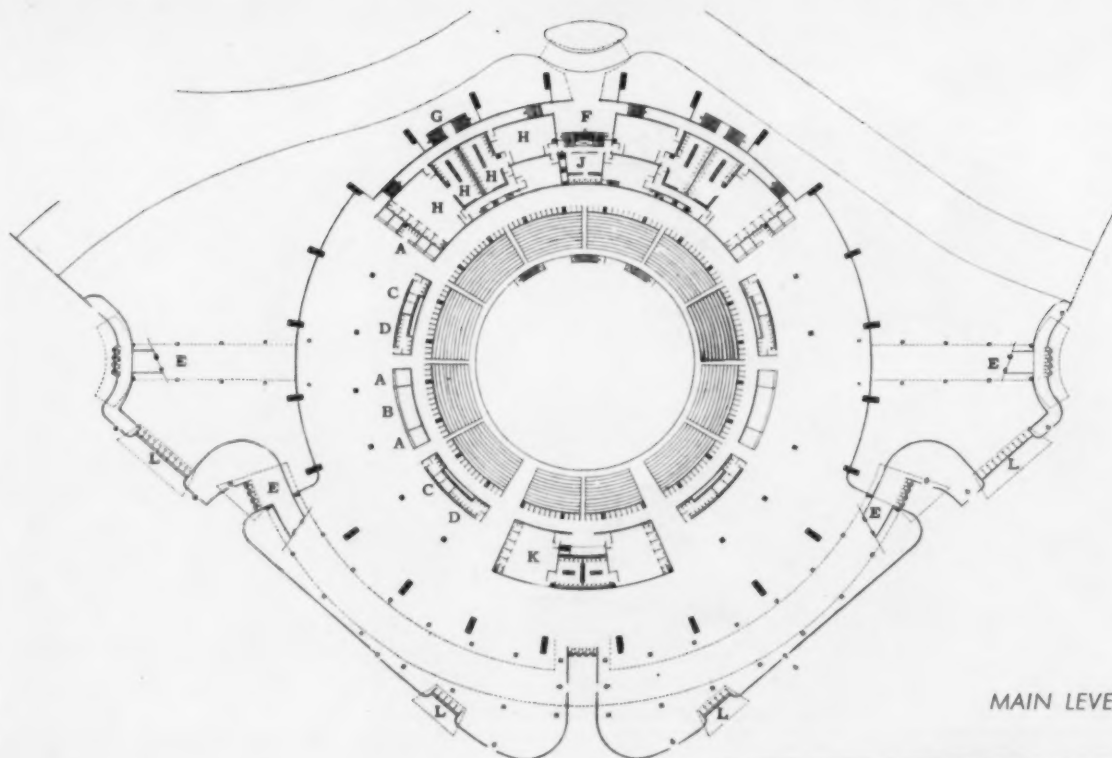
Although seemingly small by contrast with the enormous stadium it adjoins, the gymnasium for the sports center is actually of considerable size and presented most of the same problems as its big neighbor. Preliminary studies were made using the same structural shapes as the stadium, but as its roof is nearly as high as the stadium — 21 meters (68.3 ft) — it was felt that big and little versions of the same scheme would appear distorted placed side by side. The final design harmonizes well with the stadium, but maintains a



Above: plan of complete center. Track field, band shell, rifle range are at top, ball courts, pool, velodrome below

vigorous individuality of its own. The light sectional dome is balanced on arched ribs and encircled by horizontal passageways and ramps. The latter have a maximum slope of 10 per cent and are supported by thin arches. The entire structure is of reinforced concrete. A heavy monolithic effect was avoided by piercing the dome with utilitarian louvers for natural ventilation, and with glass inserts for daylighting. There is no heating system, or any forced ventilation except for locker rooms and toilets — all of which also have direct light and ventilation.

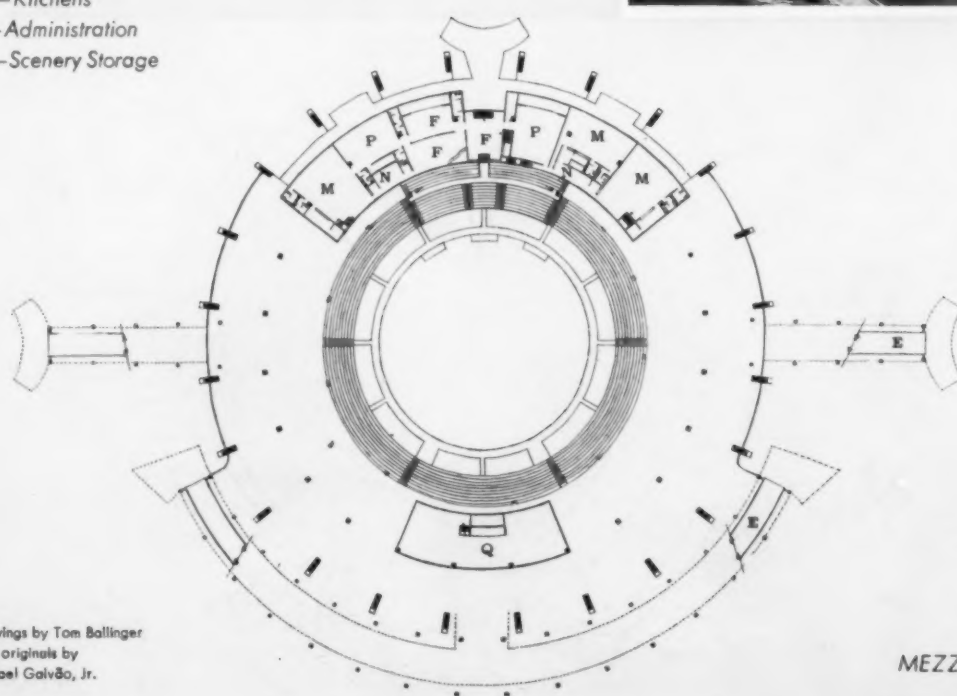
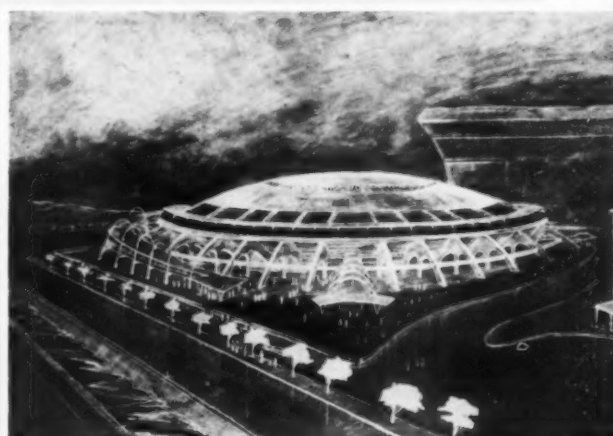
Provisions for the 35,000 spectators are divided into categories, each with separate entrances. Facilities for athletes and performers are at a lower level, completely apart from those of the spectators. Dressing rooms are connected by subterranean passages to the arena. The main level of the gymnasium is allotted to 114 boxes, with seats for 684, and 4450 reserved seats. A mezzanine has a special section and reception rooms for honor guests. The second level has unreserved benches for 21,220; the third has standing room for 8529.



MAIN LEVEL

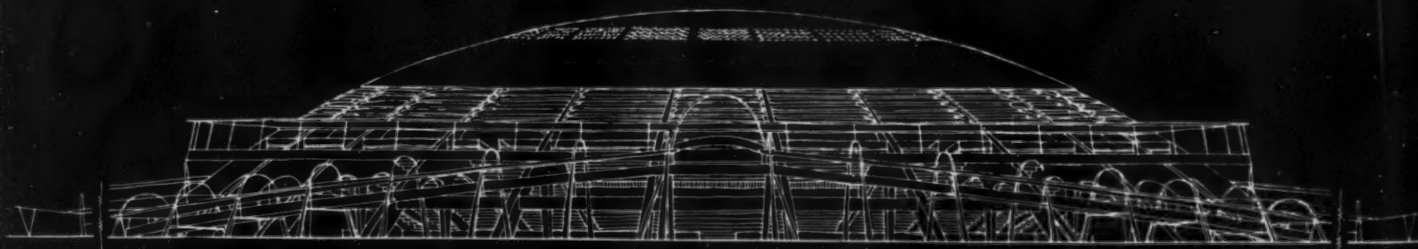
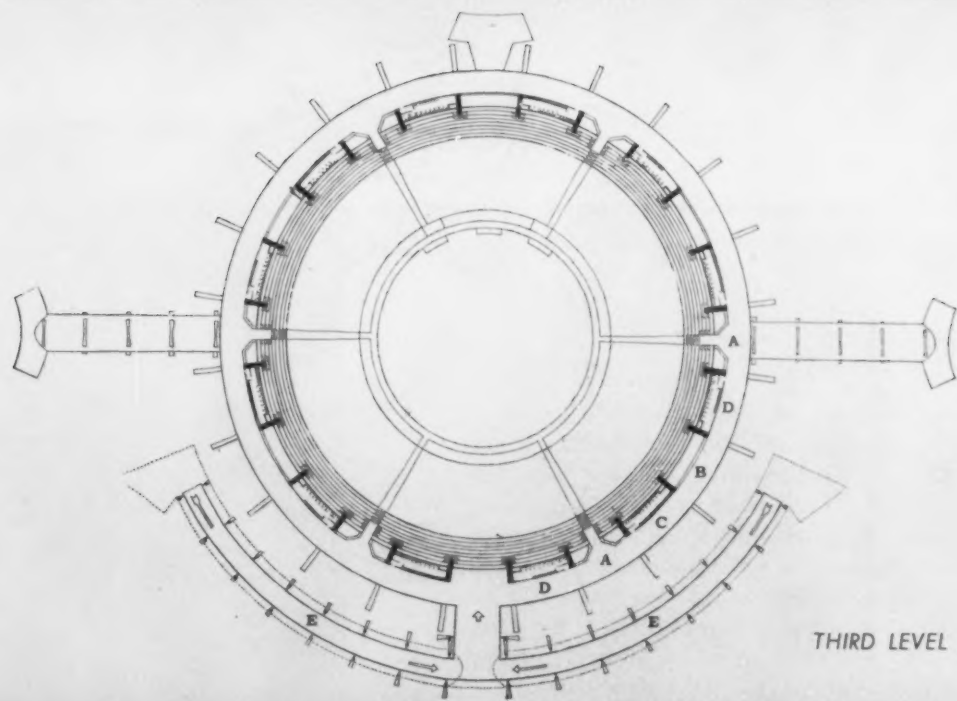
LEGEND

- A—Concessions
- B—Bar
- C—Men
- D—Women
- E—Ramps
- F—Dignitaries
- G—Athletes' Entrance
- H—Athletes' Showers and Lockers
- J—Judges
- K—Artists
- L—Tickets
- M—Restaurants
- N—Kitchens
- P—Administration
- Q—Scenery Storage

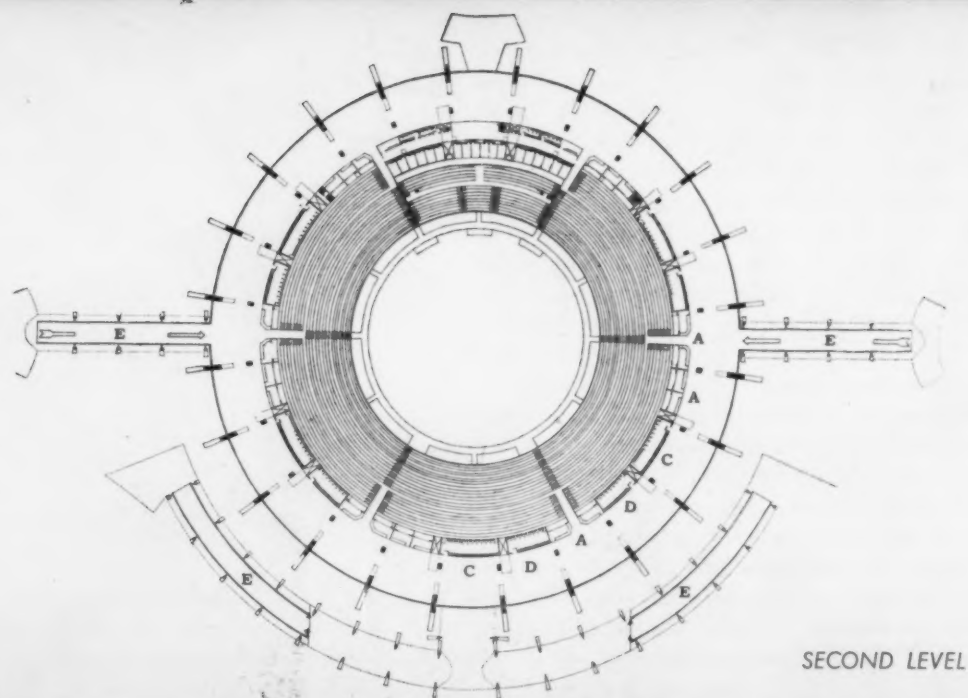


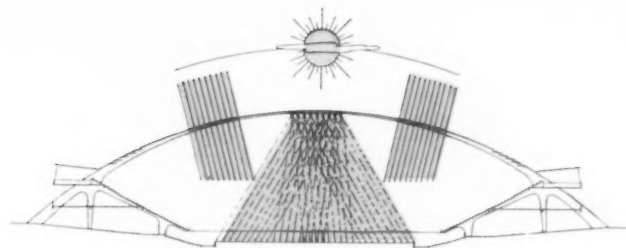
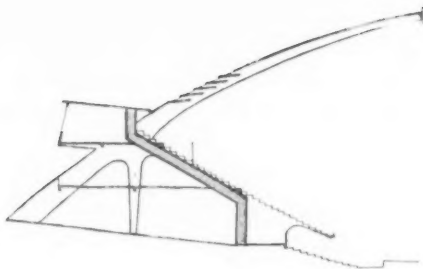
MEZZANINE

Drawings by Tom Ballinger
from originals by
Raphael Galvão, Jr.

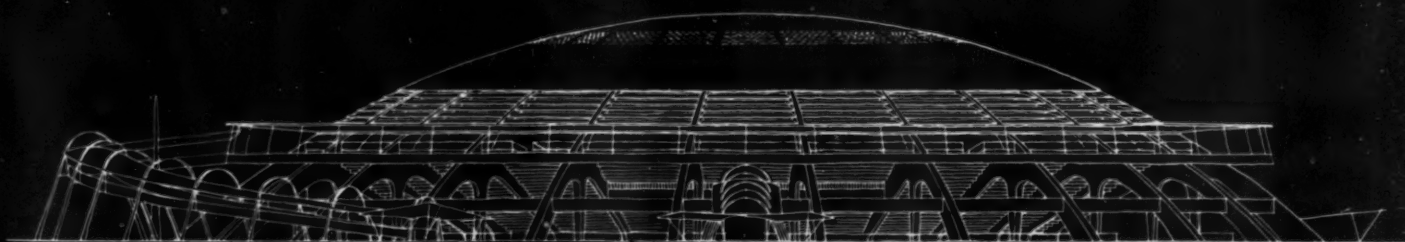
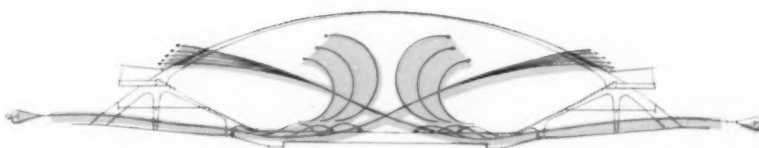


LEGEND
 A—Concessions
 B—Bar
 C—Men
 D—Women
 E—Ramps

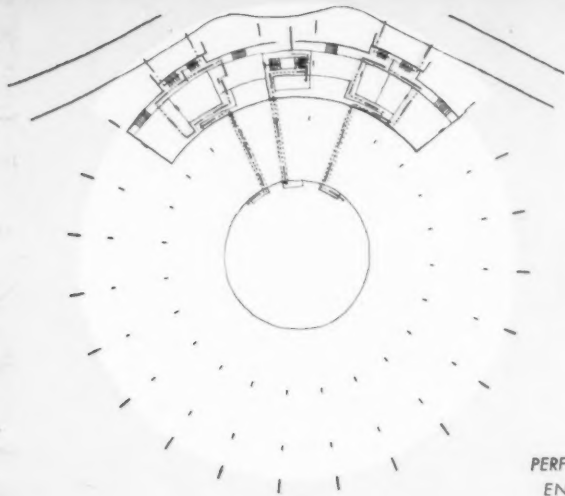




A great number of studies were made to arrive at the structural shape. The three at bottom of page are typical, ranging from an adaptation of the larger stadium to a simple dome. The latter approaches the accepted design, but has insufficient seating area. Glass inserts in concrete shell will provide daylighting (above, right), movable asbestos louvers will control natural ventilation (right). Locker rooms and wash rooms have supplementary ventilation ducts (above)



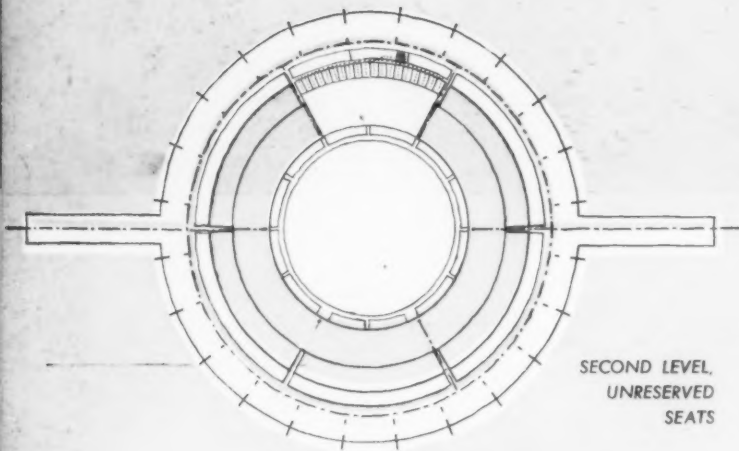
Circulation patterns for 35,000 people is major planning problem in Gymnasium



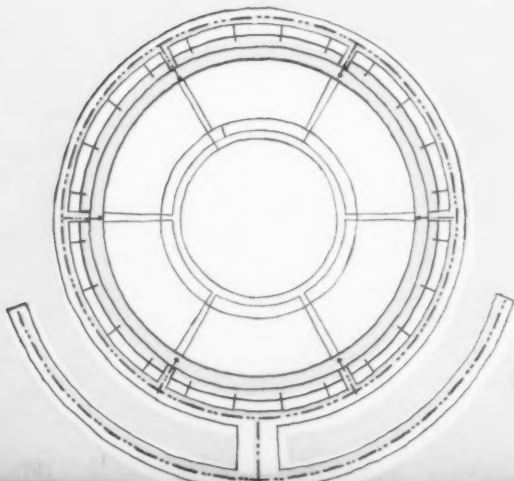
PERFORMERS' ENTRANCE



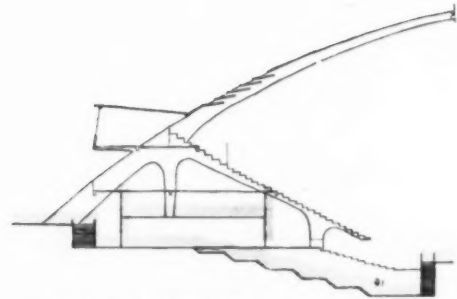
DIGNITARIES TRIBUNE OF HONOR



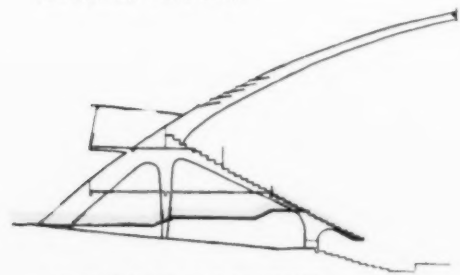
SECOND LEVEL, UNRESERVED SEATS



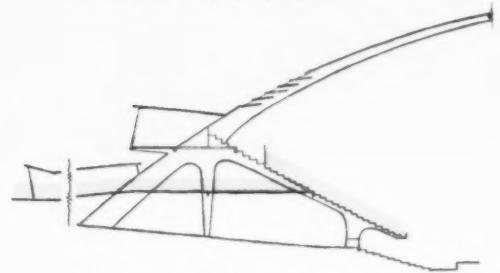
THIRD LEVEL, STANDING



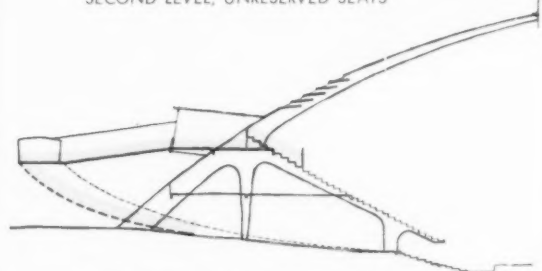
PERFORMERS' ENTRANCE



DIGNITARIES TRIBUNE OF HONOR



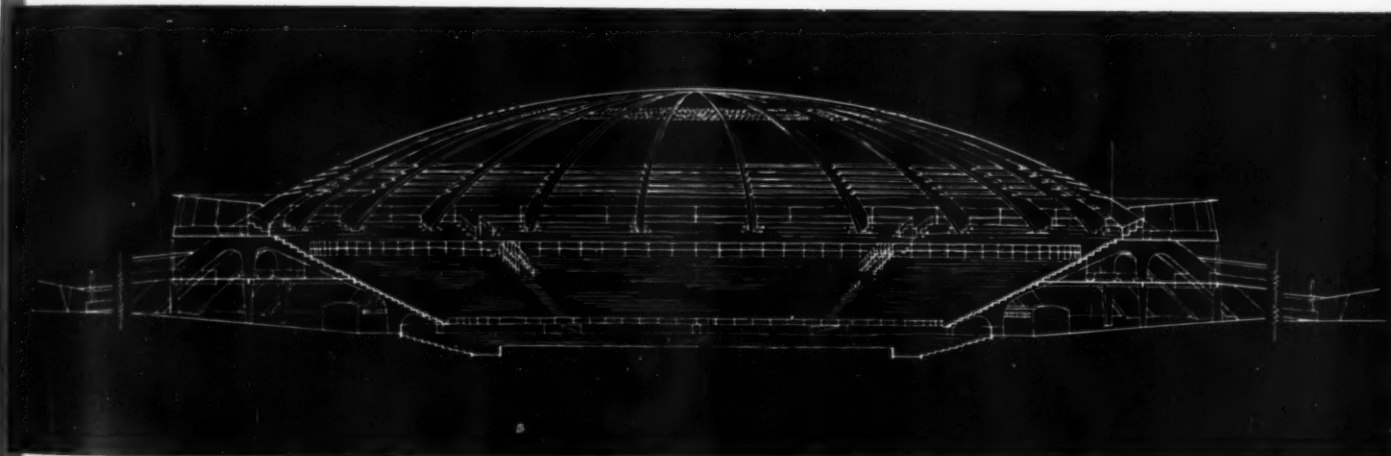
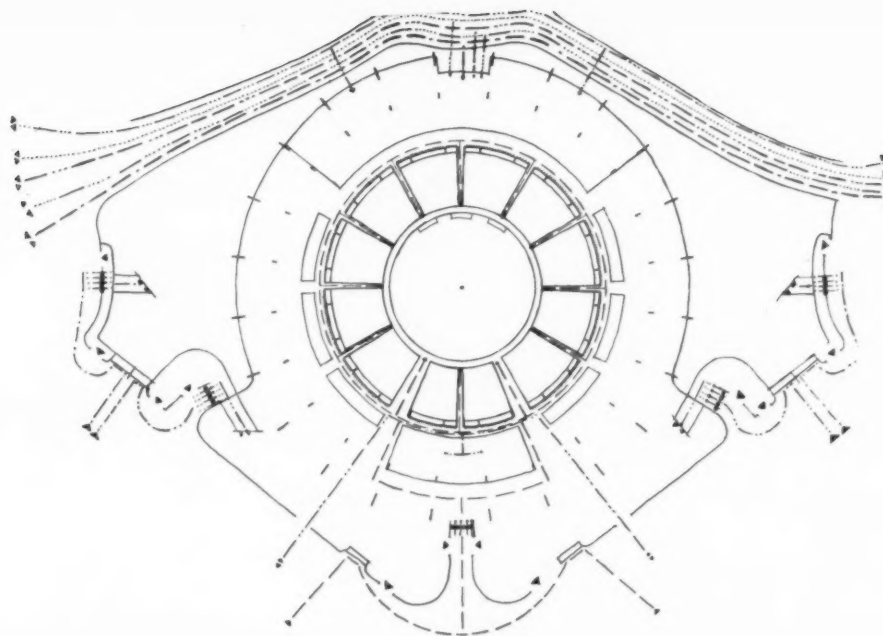
SECOND LEVEL, UNRESERVED SEATS



THIRD LEVEL, STANDING

Ease of circulation, both for convenience and safety, becomes a big problem when planning for such large crowds of spectators. As in the larger stadium, all ramp widths are calculated to empty the gymnasium in 15 minutes, none exceeds 10 per cent slope

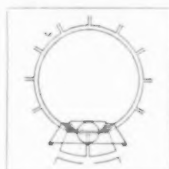
Entrances to the various levels are dispersed around the building to avoid undue congestion. Main level (right) is entered by low-angle ramp from ground level



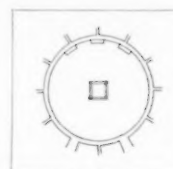
The arena was planned to accommodate a variety of events:



CONTESTS AND
PARADES



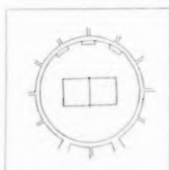
THEATER



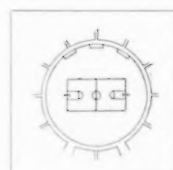
BOXING



CIRCUS



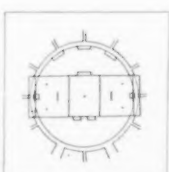
VOLLEYBALL



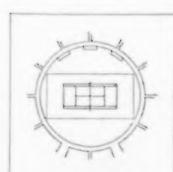
BASKETBALL



CONCERTS



ICE HOCKEY



TENNIS





AIR CONDITIONING PLAYS MAJOR DESIGN ROLE

Business Administration, Agriculture and Administrative Offices Building

Arizona State College, Tempe, Arizona

Edward L. Varney Associates, Architects & Engineers

THIS DESIGN DEMONSTRATES how climate and air conditioning can play a part in determining structural and architectural shapes and placements to produce a pleasing synthesis of all elements. The program required double-loaded corridors, which meant both north and south exposures for the three-story teaching wing, shown above and at left. This led to an eggcrate pattern of deep reveals serving to shade the glass and cut down the air conditioning load. The continuous box-like spandrels then became lateral ducts feeding air upward at the glass. Placing the structural columns outside the fenestration plane disengaged the structure from the module pattern of the mullions and transverse partitions so that vertical risers could travel without beam interference. In using the entire corridor volume as a return-air plenum, the conventional furred corridor ceiling was eliminated.

Air conditioning machinery is located in eight vertical stacks, two at each end of each wing. Each stack

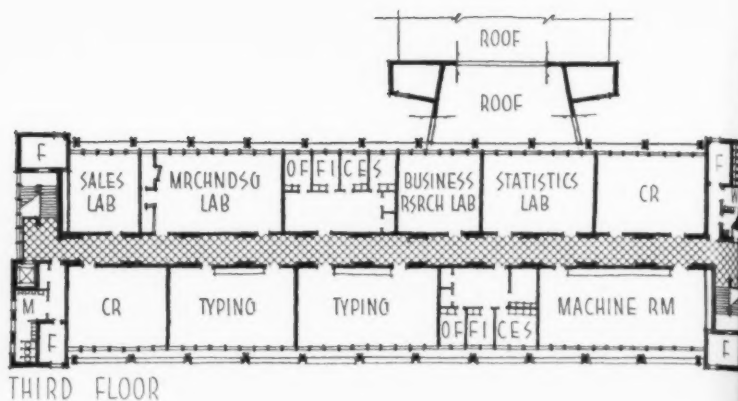
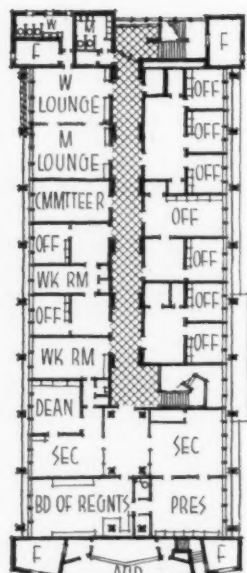
has a compressor at the bottom, air handling equipment at each floor and a condenser at the top, which means that refrigerant is pumped from the lower level through coils at each floor and on to the evaporative condenser above. Air is blown over the coils, into the hollow spandrel and circulated at each level. Such a system is flexible, since each unit covers only a quarter of a floor, and economical, due to short runs of both refrigerant and air.

Because of a legislative technicality, three separate functions had to be accommodated in a single structure — thus the building comprises a two-story wing for college administration and a three-story wing for the schools of agriculture and business administration. In the latter, class and lecture rooms are common to both departments but the laboratories are separated.

Completed in 1951, the cost of the building including a 300-ton air conditioning plant and all except movable furniture and equipment was \$9.96 per sq ft.

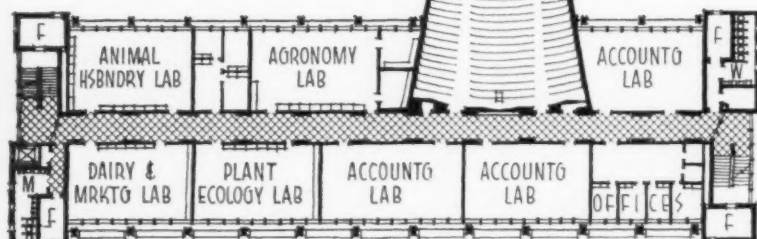
COLLEGE BUILDINGS

ARIZONA STATE

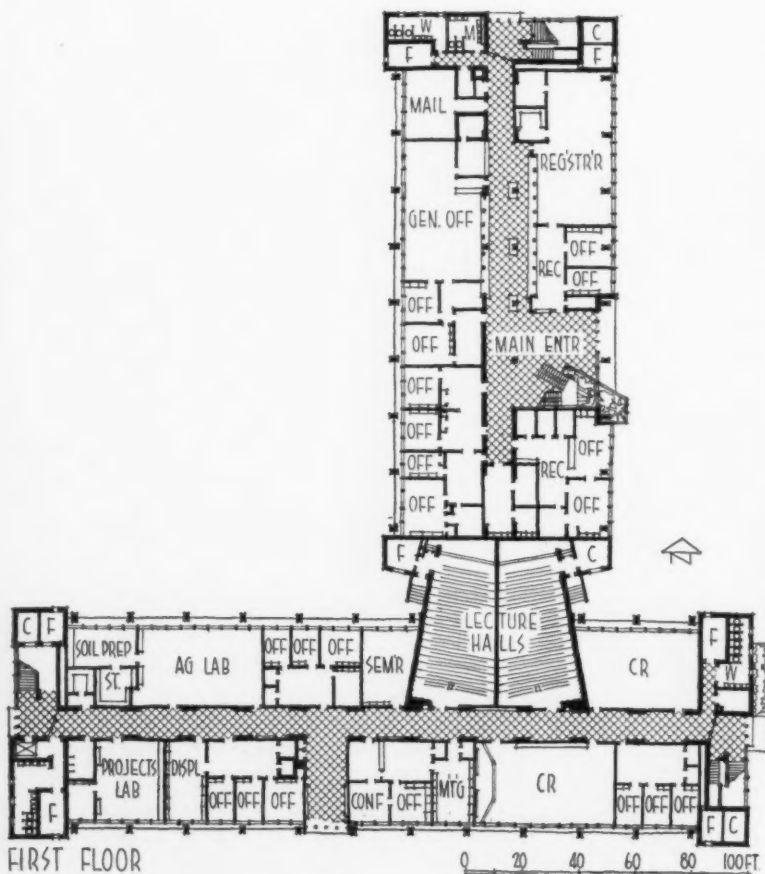


THIRD FLOOR

Plans at left: the two-story administration wing runs north and south—the three-story teaching wing runs east and west. At their juncture the auditorium-lecture hall link completely separates these two main elements. F indicates fan room—C compressor room



SECOND FLOOR



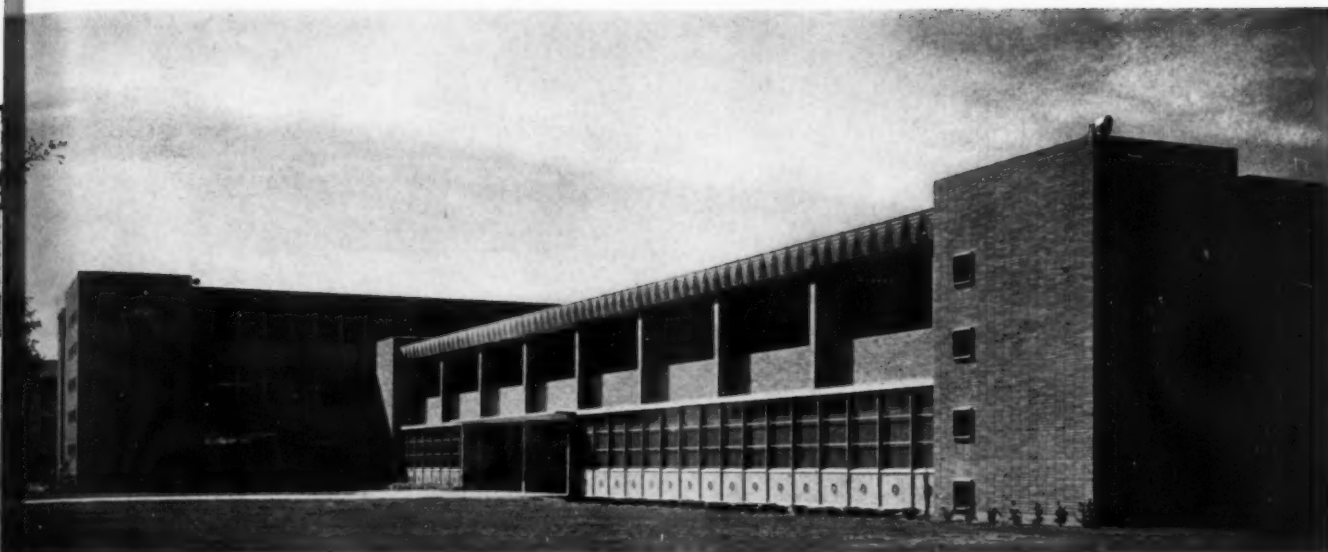
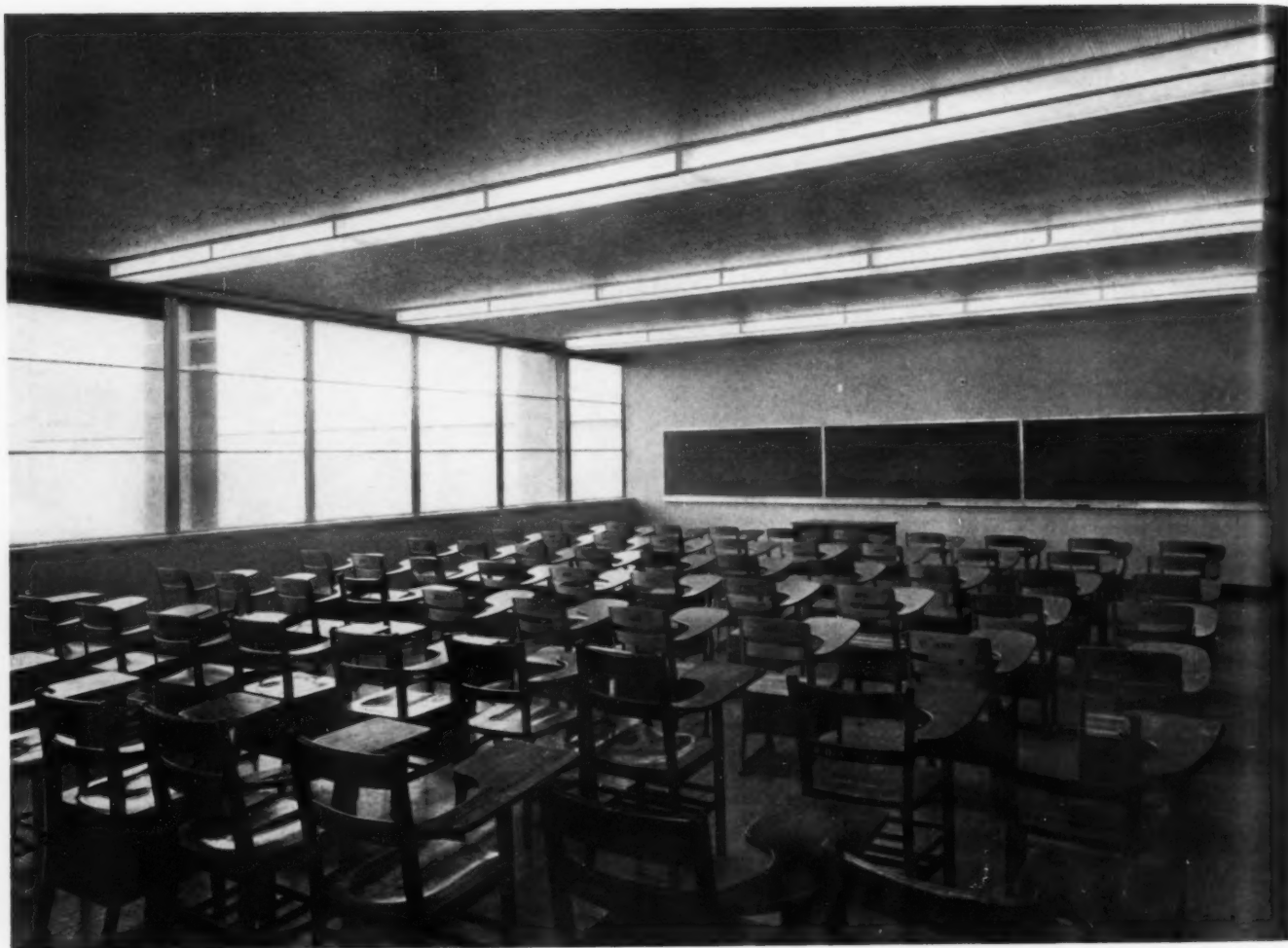


Photo above and on left page: spandrels and corner towers of buff brick—exterior stair of reinforced concrete, interestingly cantilevered from a central column—fireproofing for exterior steel columns of precast rather than poured concrete—all exterior metal aluminum, including sash and entrance doors. Below: stair in administration wing lobby is reinforced concrete with terrazzo finish, aluminum rail

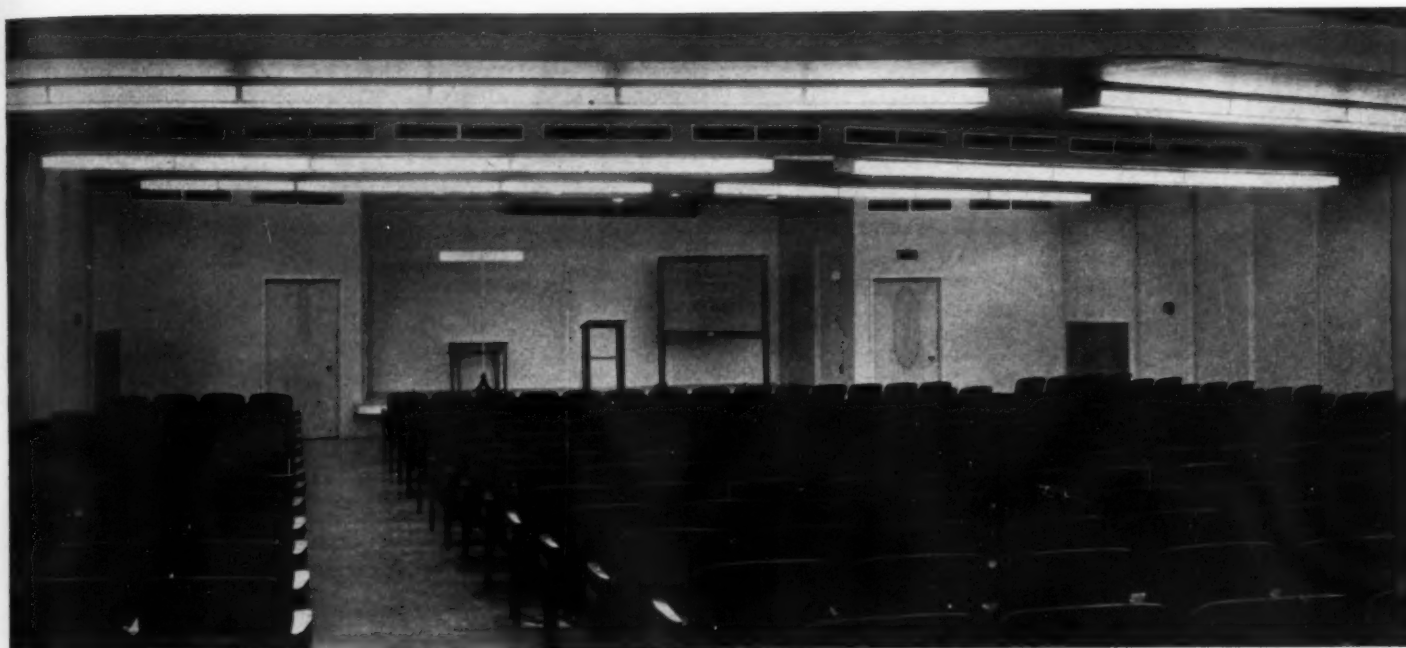




Stuart A. Weiner



COLLEGE BUILDINGS
ARIZONA STATE



The two photographs on facing page show interiors of typical classroom and laboratory; note how exterior structural columns stand free of glass and independent of mullion module pattern. Classrooms are shared in common by the two academic departments in the building—laboratories are designed for a specific use within one department



Above and top right: auditorium for lecture and demonstration—this element forms the link between the two wings since daylight is not desirable here. Auditorium occurs at second floor level

Bottom right: view of one of the twin lecture amphitheaters located below the auditorium at first floor level



COLLEGE BUILDINGS

ARIZONA STATE



Meeting room for the Board of Regents (above) has wood panelled walls; architect designed cases and planting box

Below: office of the college president—built-in bookshelves and cabinets, white oak wall panelling, acoustical ceiling

Stuart A. Weiner





RECREATION CENTER WITH MODERN INTERIORS

Student Union Building, Ohio State University, Columbus

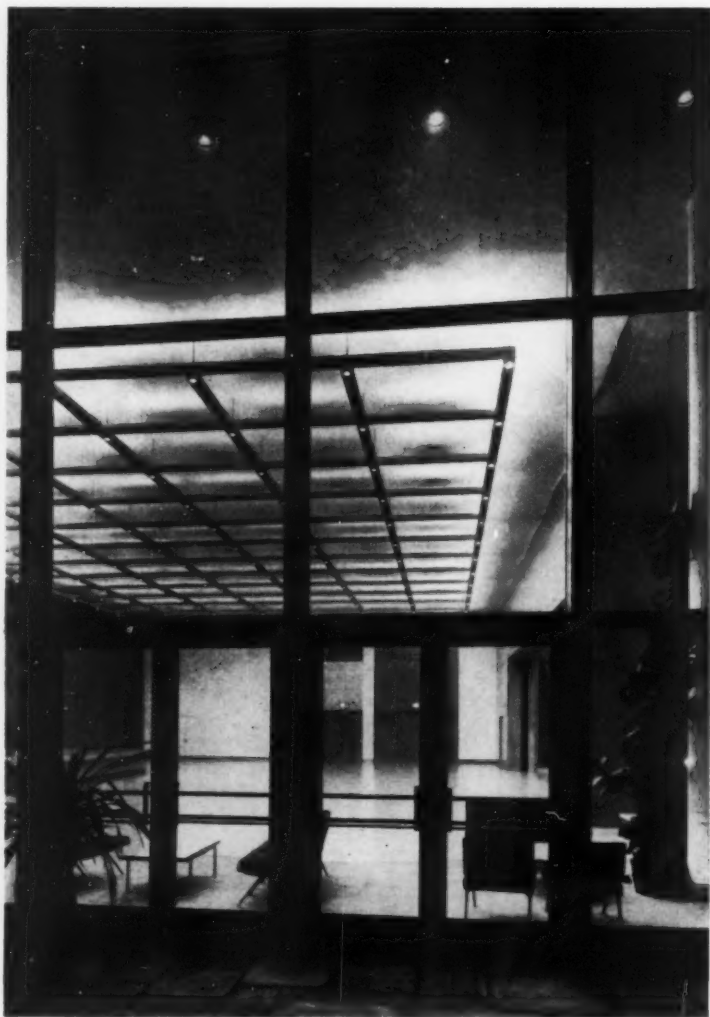
Bellman, Gillett and Richards, Architects & Engineers

Howard Dwight Smith, University Architect

Knoll Associates, Interior Consultants

Joy Ostad





Ground floor ballroom from terrace

THESE ARCHITECTS had not made interiors a part of their regular service until this opportunity arose. For this project they contracted for a complete job, including all furnishings, and called in consultants to advise on fabrics, furniture, etc. The joint effort produced a group of interiors widely praised.

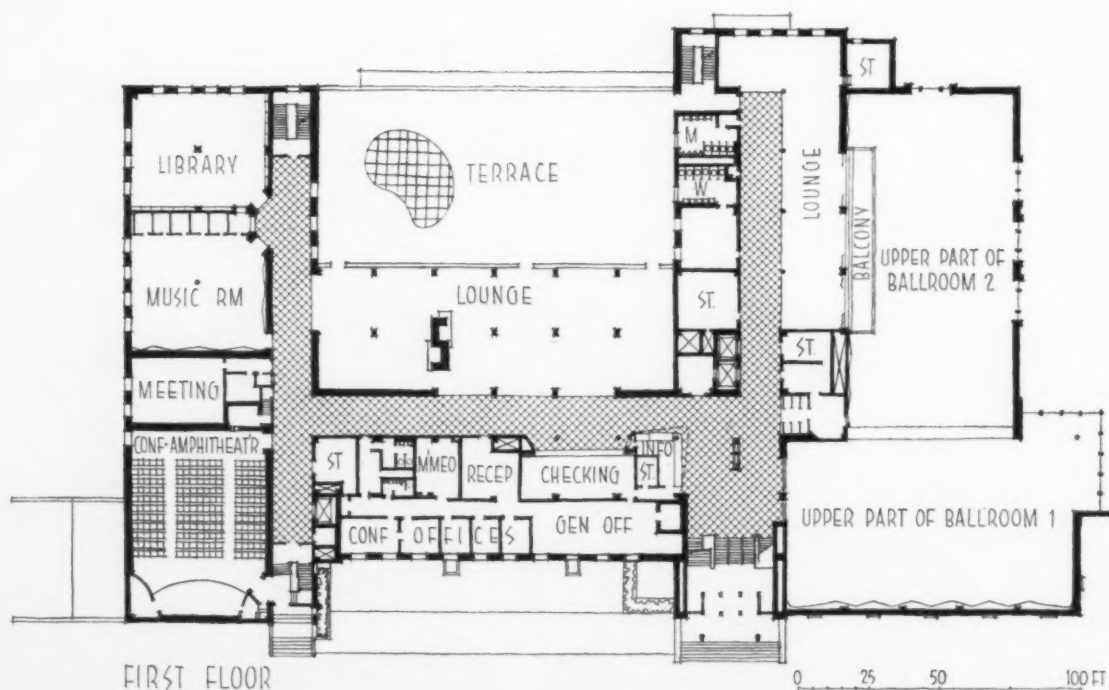
As a result of this happy experience the architects have taken on several additional interior jobs, thereby adding to the volume and scope of their practice.

Ohio State students wanted a Union Building, but were advised that more urgent needs for a hospital, laboratories and dormitories would have preference before the legislature. They therefore organized a campaign and circulated a petition to the university trustees. Despite knowledge that the building could not be completed during their student days, 14,235 students signed in three days, agreed the project must be self-liquidating and pledged a maximum of \$5 per quarter. The trustees approved, assigned a site, and a committee of students, faculty and alumni worked a year on the program, after which the architects started their plans.

The building follows four main divisions: (1) recreation at basement level, (2) dining and ballroom facilities at ground floor level, (3) lounges and administration on the first floor, and (4) student activities offices and private dining on the second floor.

The principle of locating kitchens, deliveries and dining at campus level was followed; also the idea of facing principal rooms and terraces toward "Mirror Lake Hollow," traditional campus beauty spot.

Heat is furnished by converting steam from the central plant into circulating hot water. There are pipe coils in terraces and approaches to melt winter snow.





1

2



Jay Oltad

1 Main Lounge

2 Browsing Library

3 Auditorium

In addition to an administration suite, music room and meeting room, the principal rooms at first floor level are the large lounge which opens through a glass wall to a flagstone terrace facing the campus "hollow"; a browsing library offering periodicals; a conference auditorium seating 250, used for forums and small concerts

3



COLLEGE BUILDINGS

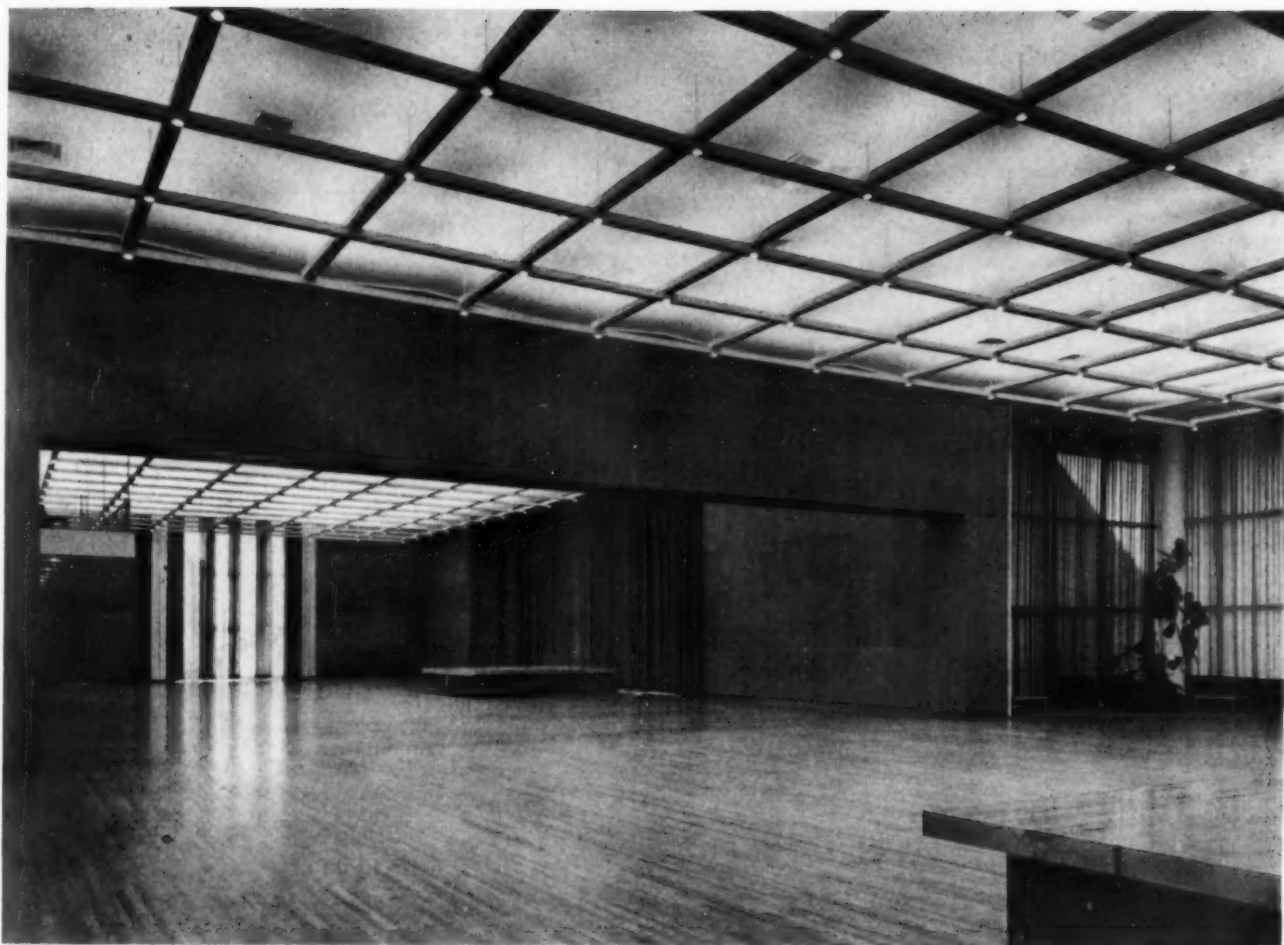
OHIO STATE



The two ground floor ballrooms (top right) open to a terrace facing campus view; can be separated or combined by a motorized wall; four-color fluorescent lighting is adjustable to any color



Principal stair has terrazzo treads and risers, satin-finished aluminum handrails, ends at ground floor level in lobby for ballroom



Jay Oistad



Cafeteria (above) has three counters, two 40-ft conveyors for soiled dishes. Tavern (right) features fireplace, brick and cherry plank walls





COLLEGE BUILDINGS
OHIO STATE

Basement recreation facilities include 16 bowling alleys (above), 18 billiard and pool tables (below), a card room, a room for eight tennis tables, photography darkrooms, a hobby room



In addition to a 10,000 sq ft wing devoted to offices for student activities, the top or second floor provides 17 private dining rooms (two photos at right). Collapsible partitions divide these areas and provide maximum flexibility for accommodating either large or small groups. Photographs show the space with partitions in open and closed positions



The second floor dining room (below) seating 100, opens to a terrace for outdoor dining in favorable weather, and is adjoined by a large lounge used occasionally for art exhibits. A soft, pleasing light for dining results from suspending plastic eggcrate diffusers below flush downlights



Jay Orstad





COLLEGE BUILDINGS



DESIGNED FOR 600-LB

Engineering Building

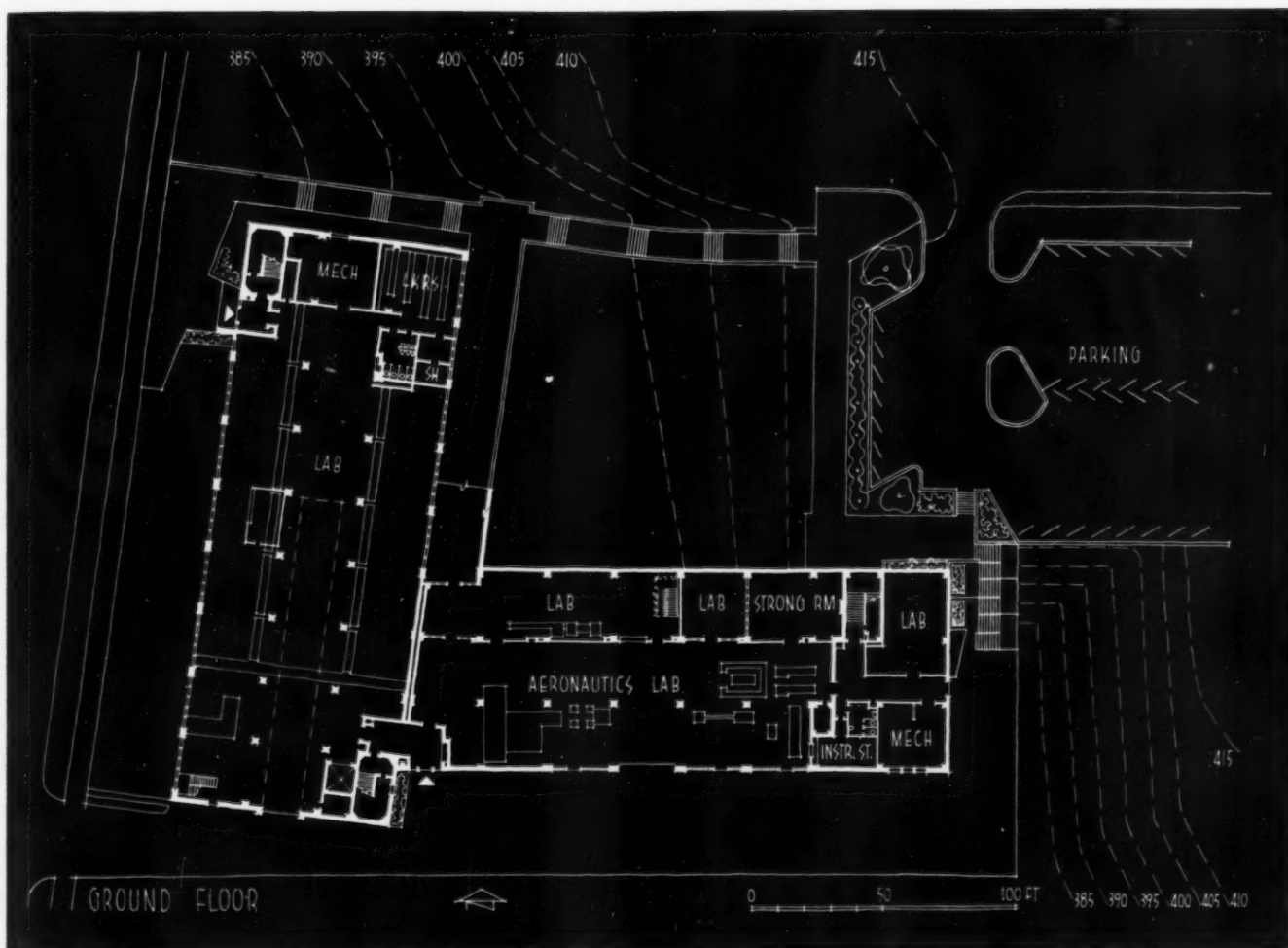
University of California, Los Angeles Campus

Allison and Ribble, Architects

Welton Becket & Associates, Supervising Architects

THIS BUILDING is the first unit in a projected group for engineering study at UCLA. Built at the foot of a hill on a site facing Westwood Boulevard, the main planning problem was to relate the engineering labs to the remainder of the campus buildings, located on a higher level at the top of the hill. Eventually, the main entrance to the engineering group will be located at the higher level, facing the campus.

Designed for heavy duty usage, the buildings will accommodate live loads ranging up to 600 lb per sq ft. Provisions were made for craneways, open wells, elevators, trucks and for free movement of a tractor-trailer with a 7-ton load on all levels and on portions of the



LIVE LOADS

Elevations at street level (left page) face away from main campus group. Plot plan (above) shows parking area (below). Aeronautics wing (below) contains 62,500 sq ft



Julius Shulman

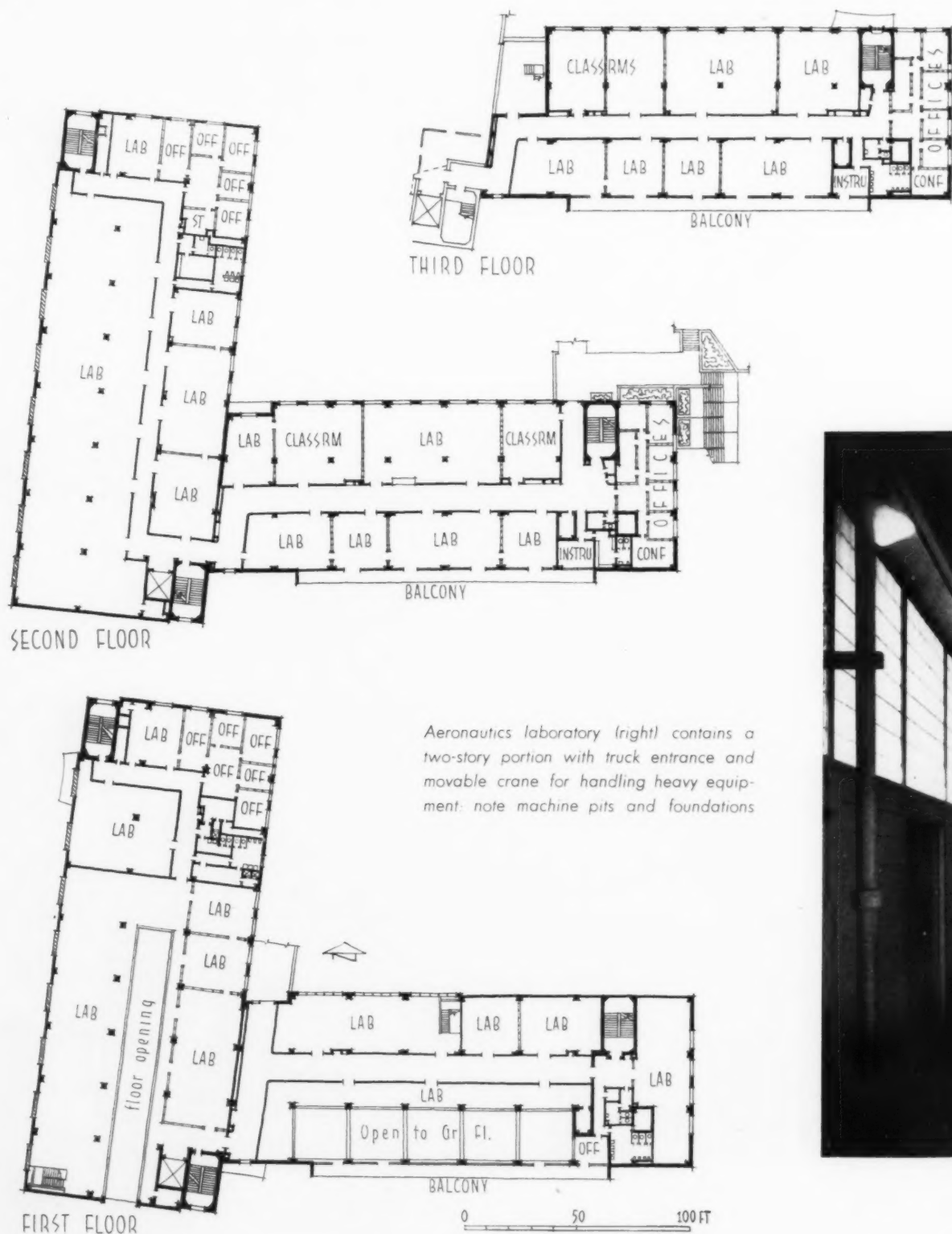
COLLEGE BUILDINGS

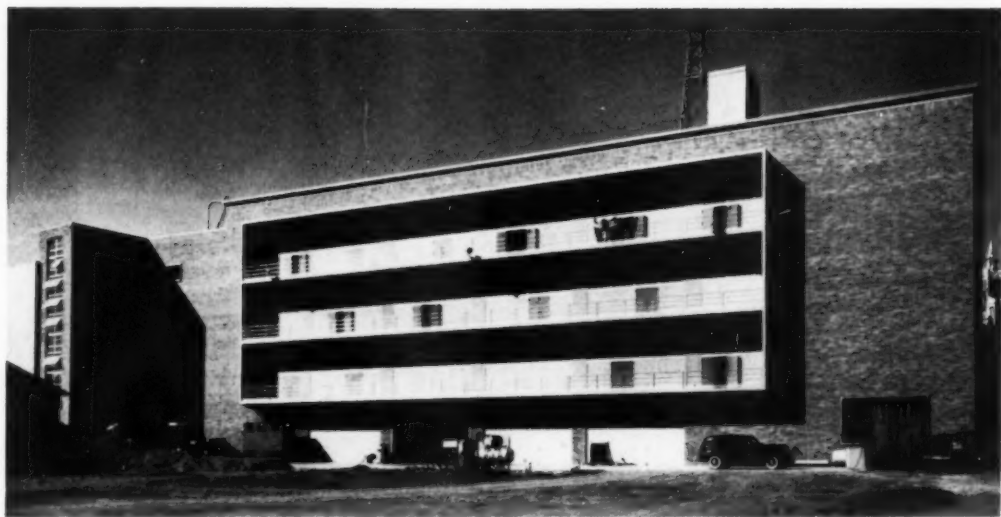
UCLA

roof. For added convenience in handling large engineering apparatus horizontally and vertically as well as indoors and out, there are ports in floor and roof slabs, masonry panels are removable and balconies afford ac-

cess to outdoor experimental setups. A 7 ft 6 in. parapet effectively shields outdoor project activities on the roof from the higher campus view.

The structural frame is of reinforced concrete; portions of the exterior are of red brick selected to harmonize with the existing buildings; all windows and grills are aluminum, as is the ornamental metal work at the Westwood Boulevard entrance.

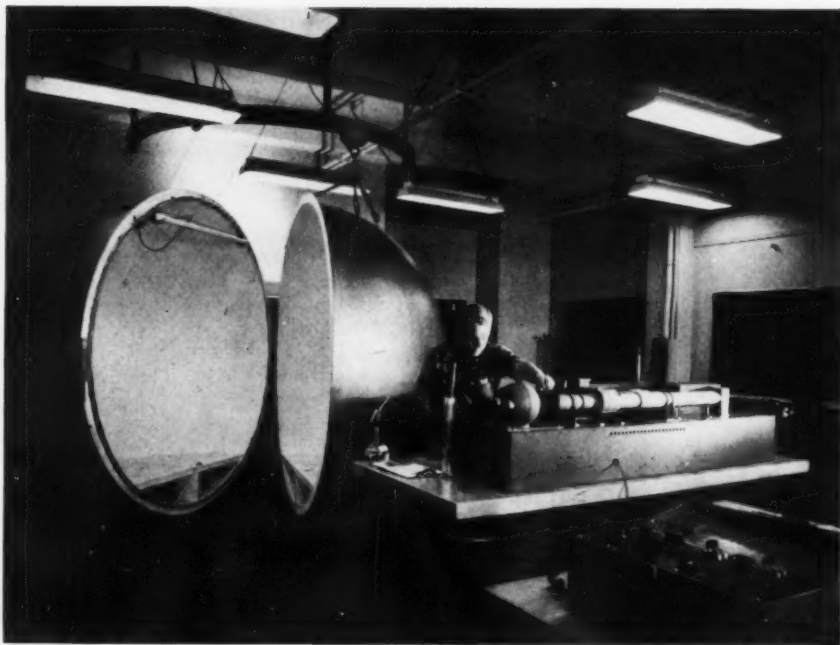




Balconies and roof with high parapet (above) are used for outdoor study. Hydraulics laboratory (below, right) has high central area and motor-operated doors for truck entrance



Julius Shulman



COLLEGE BUILDINGS

UCLA

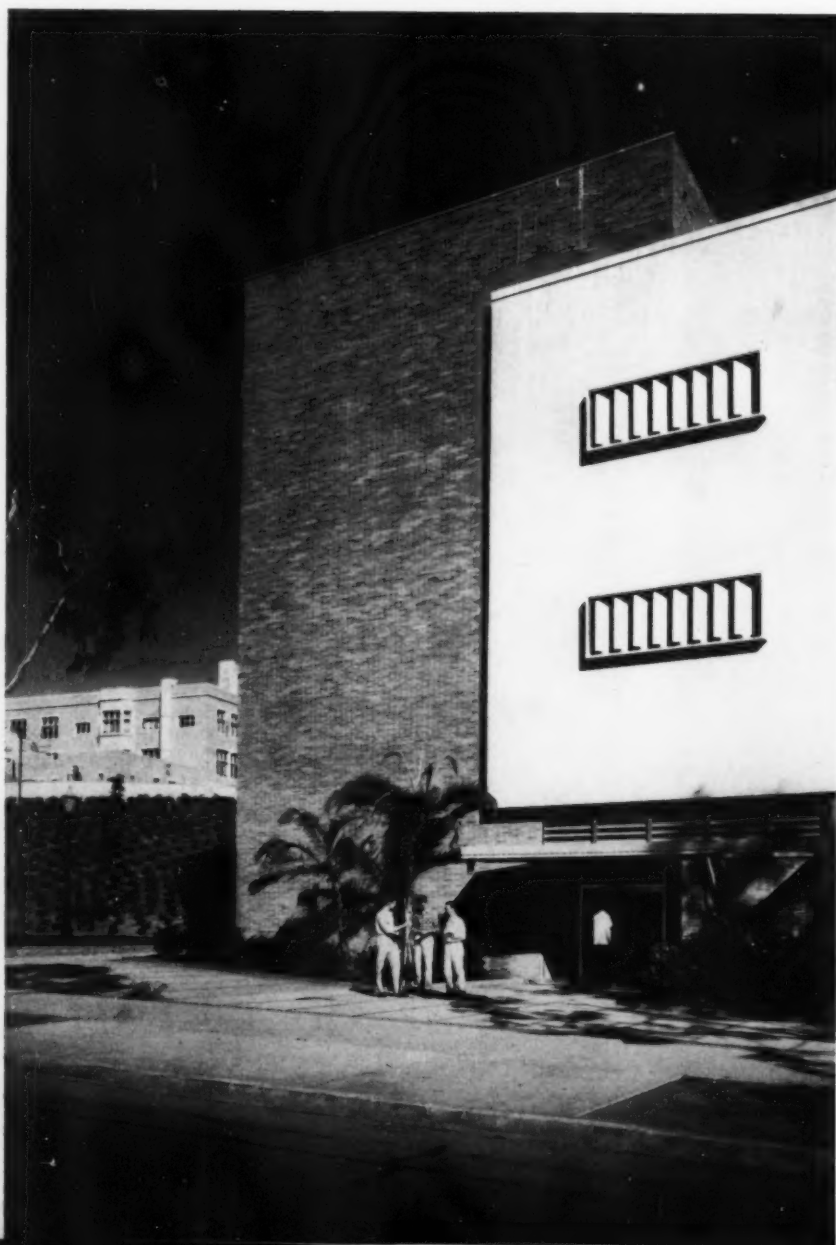
Julius Shulman



Physics experiment (top left) in one of the small laboratories on the upper floors

Stairway (above) is located at end of aeronautics wing; serves as vertical link between lower or street level and remainder of campus. Warm colored brick walls; aluminum windows and grills; stainless steel railing; concrete treads and risers

Entrance at Westwood Boulevard (left) features aluminum marquee, entrance doors and louvers; exposed concrete and brick walls



CONTEMPORARY DESIGN AMIDST COLLEGIATE GOTHIC

Classroom Building for Graduate Study

Concordia Seminary, Clayton, Mo.

Kenneth E. Wischmeyer, Architect

THE EVANGELICAL LUTHERAN SYNOD OF MISSOURI commissioned Charles Z. Klauder to design the original buildings for Concordia Seminary. Located in the suburbs of St. Louis on a rolling, tree-dotted campus, the "collegiate gothic" group was completed in 1925, served without addition until this classroom building was begun.

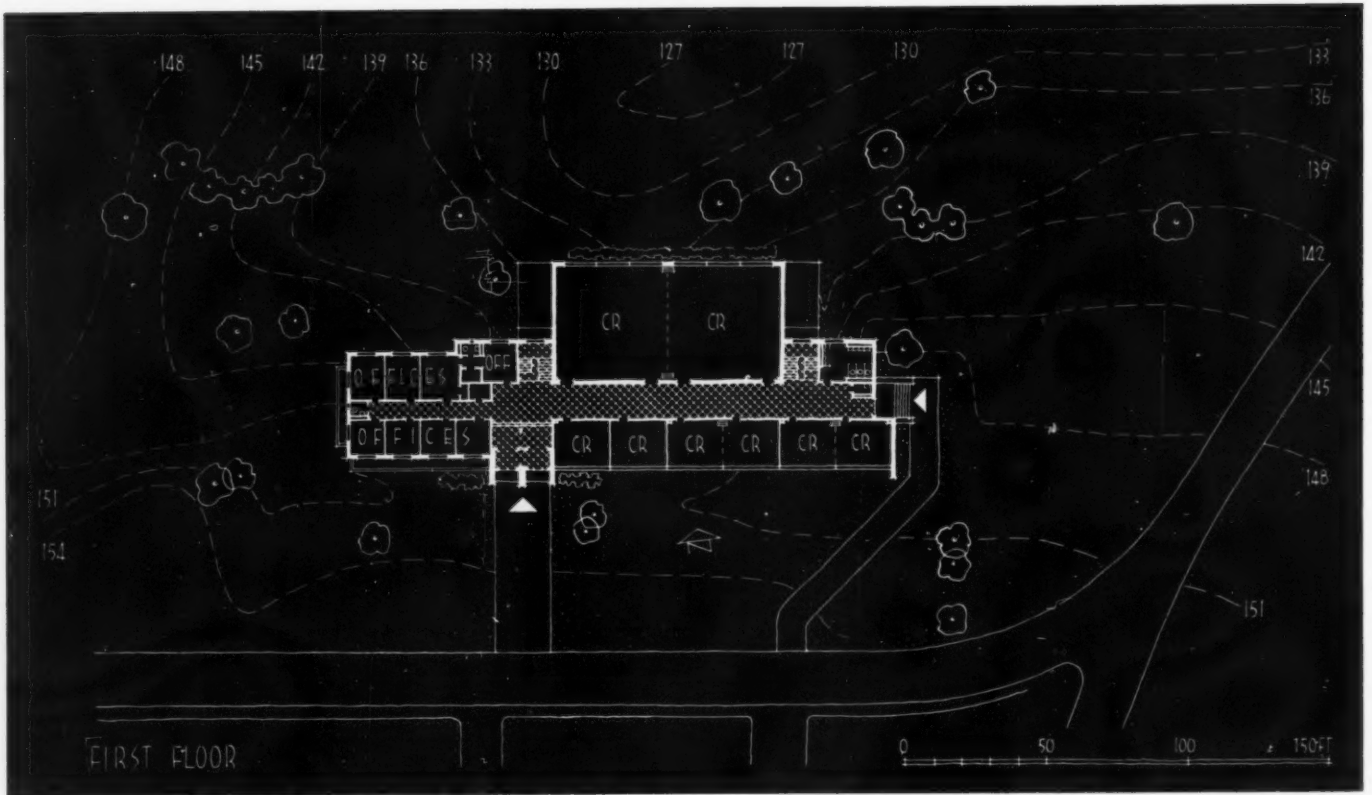
The Board of Control held originally that any new structure should conform in spirit to those existing, but finding their desires exceeding their budget and the need very great, finally consented to a straightforward

building devoid of mouldings or ornament for the new graduate building. The resulting modern design met the budget and cost \$11 per sq ft. There has been universal praise for the interiors, while reaction to the exterior has been mixed. The building has probably set a precedent which may clear the way for similar, unpretentious projects in the future.

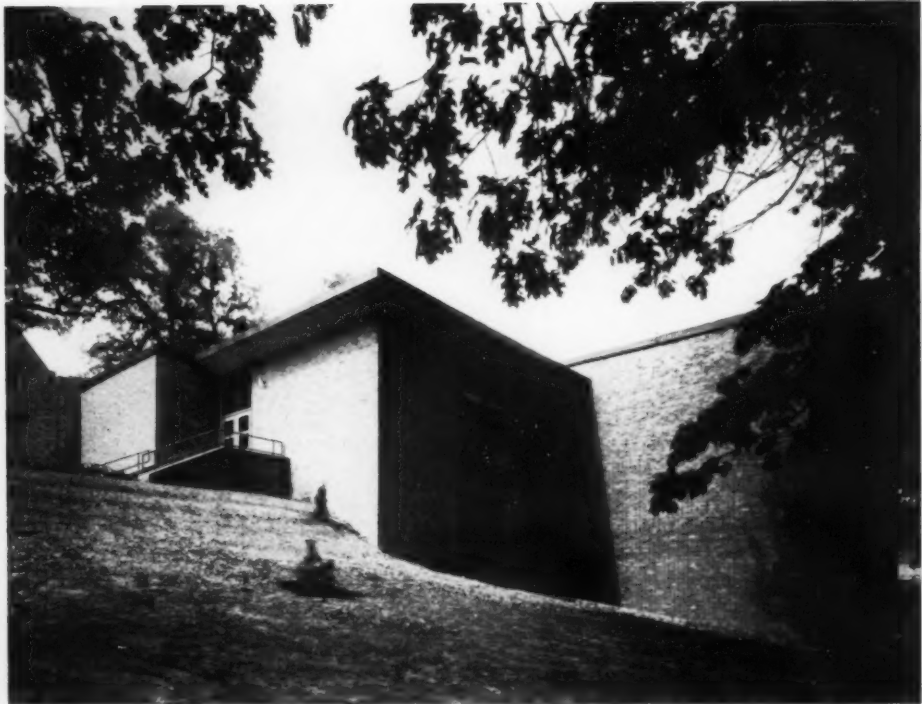
Structure is steel frame and joists with concrete floor slabs — exterior red brick and stock steel sash — interior walls are exposed lightweight block, painted — floors are asphalt tile — ceilings are acoustic tile.

Hedrich-Blessing



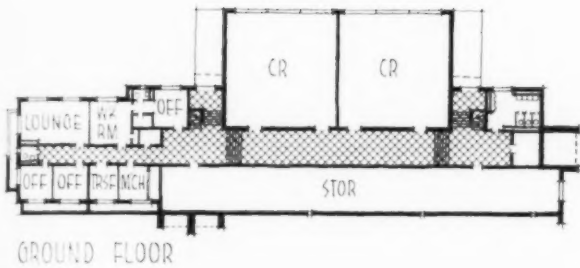


Hedrich-Blessing



COLLEGE BUILDINGS

CONCORDIA



Benching the structure into the rake of a hill sloping downwards 15 ft from front to rear (see opposite page) resulted in a one-story elevation toward the road and a full two-storied building at the rear

Below: large lecture-classroom at first floor level can be divided into two smaller classrooms by closing the lateral folding partition. Note the duplicate lecterns and sound equipment for bilocular use



COLLEGE BUILDINGS

CONCORDIA

Hedrich-Blessing



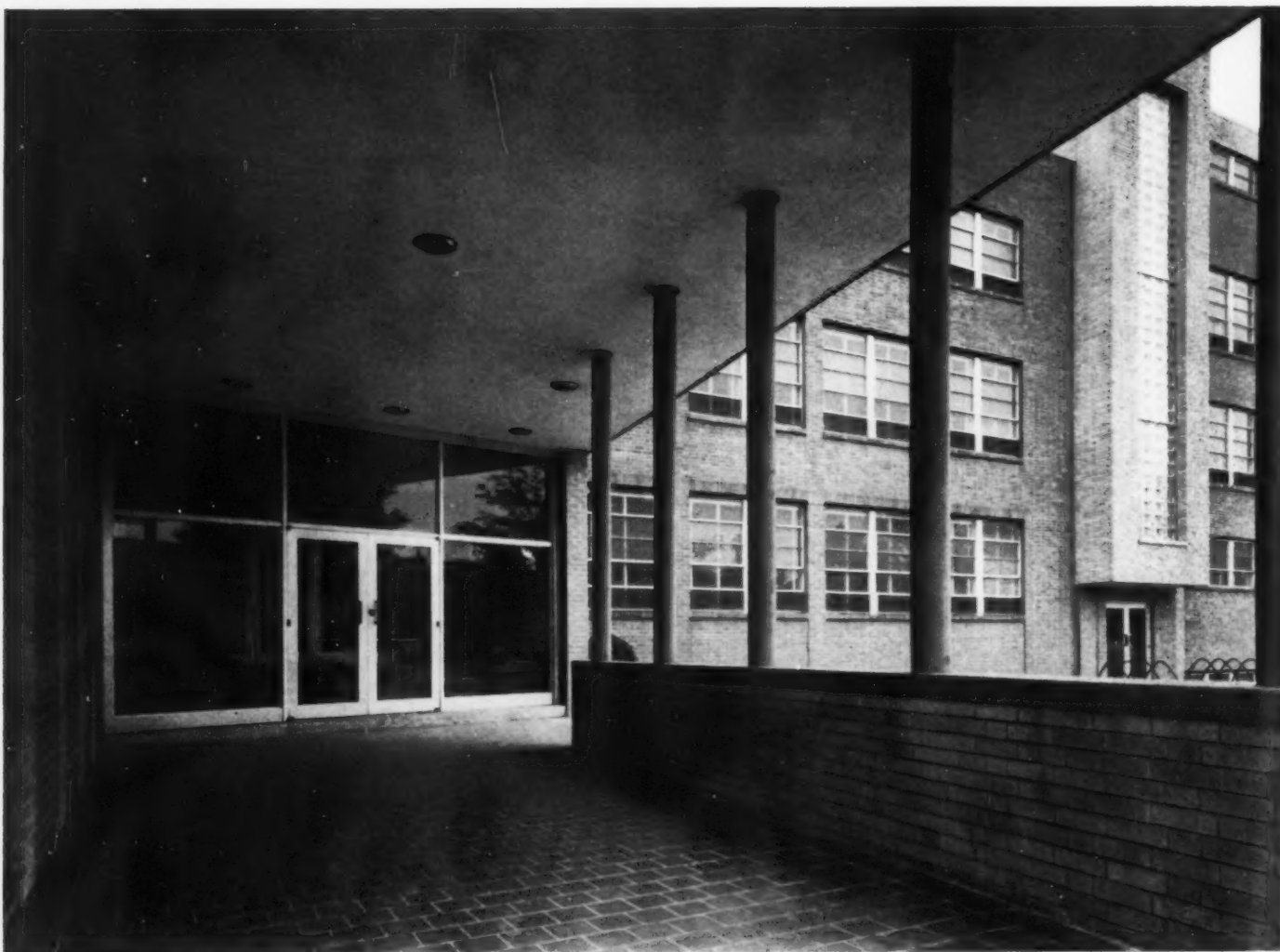
Street elevation (above) shows use of stock sash to produce an unbroken horizontal band

Right: steel pan stairways with cement-filled treads and acoustical tile soffits provide a neat and economical connection between ground and first floors. Railing is of welded steel pipe in a simple, attractive design. Note exposed painted block, laid in an interesting bonding to yield a low-cost, good looking wall

Right page: at the rear two-story portion, brick verticals sheathe the steel columns, express the structure. The entire remaining panel from grade to roof becomes a pattern of standard steel sash and insulated steel panels, broken only by the unit ventilator grills. Overhanging roof soffit is precast lightweight plank



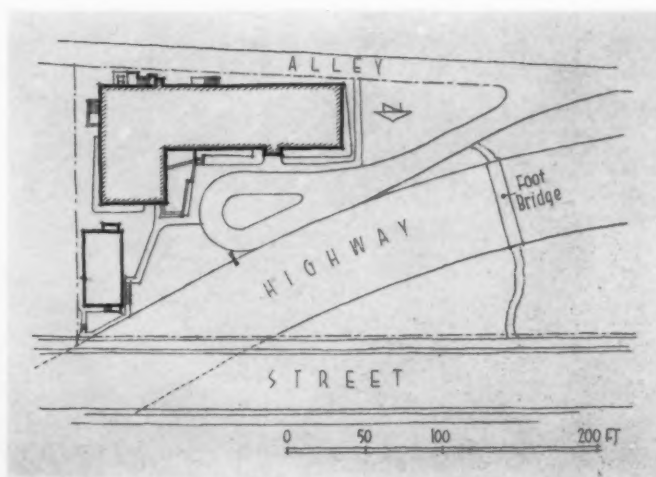




Hedrich-Blessing

LABORATORIES AND CLINIC, CENTRAL INSTITUTE

William B. Ittner, Inc., Architects



THE Central Institute for the Deaf was founded in St. Louis by the late Dr. Max Goldstein, in 1914. It began in limited quarters over the office in which he practiced as an ear specialist. Now it is an internationally known private center comprising a school for deaf and speech defective children, a training college for teachers of the deaf and of speech correction, hearing aid and auditory training clinics, psychological and research laboratories, library, and engineering shops. It maintains close liaison with the adjacent teaching hospital and Washington University.

Early in 1951 the new research laboratory and clinical building was completed. As the site plan shows, a depressed superhighway passes close to the new building. Since research into the nature of sound is an important part of the Institute's program, the vibration and noise caused by heavy traffic might have been expected to cause trouble. However, soil conditions were excellent, and the reinforced concrete columns and floor slabs, gypsum tile partitions, and full acoustical treatment of interiors — all required in any event — eliminated interference with sound control.

It is unusual to find associated under one roof the combination of activities which the Institute carries on. Fundamentally these are: research, teaching, teacher training. They require pursuit of basic, applied and clinical sciences and training in education and in audiology (study of problems of oral communication both receptive and expressive). The building is departmentalized approximately by floors, with shops — the Institute builds its own electronic equipment — and archives on the ground floor, clinics and other areas to which many people need ready access on the first floor, classrooms on the second, and laboratories on the third. In addition to clinics and laboratories, the building contains elaborate equipment and affords opportunities for studies in physiology (especially neuro-physiology and electro-physiology), psychology, speech pathology, physics and engineering as applied to acoustics and otology. At one end is a two-and-a-half story anechoic chamber, shown on subsequent pages, in which virtually 100 per cent of sound is absorbed. All these facilities provide means for studying the absolute nature of sound and its effect on human beings.

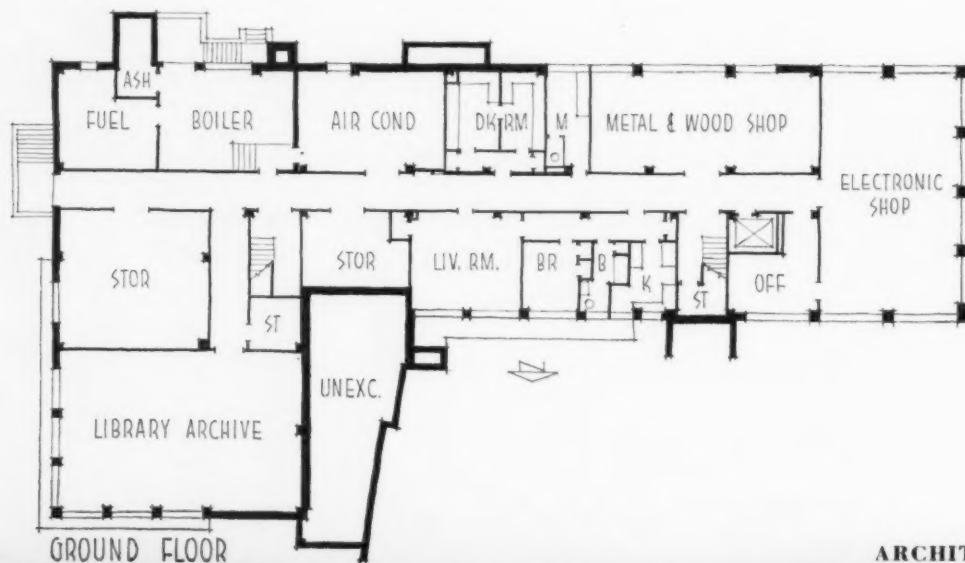
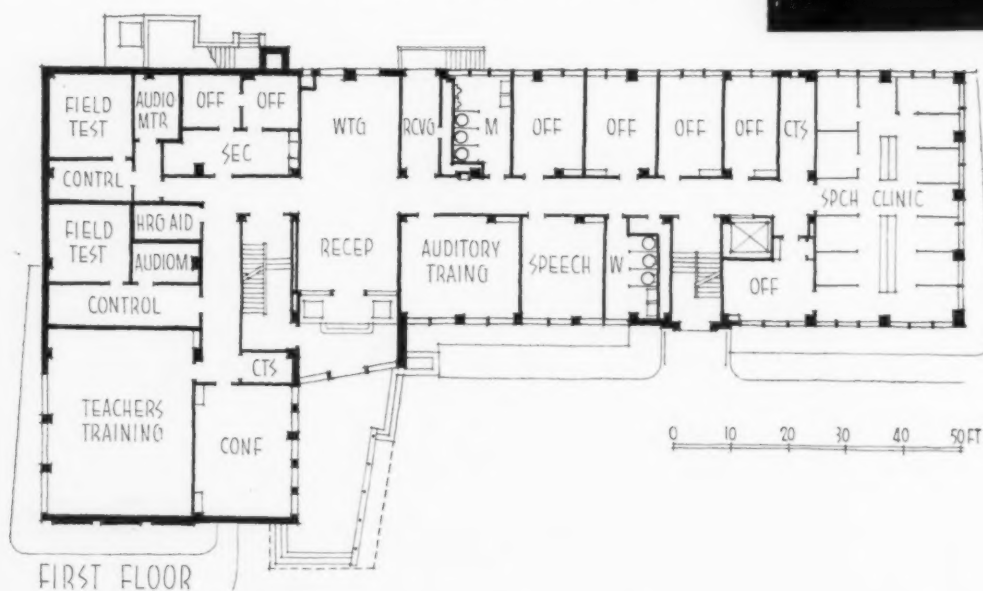
FOR THE DEAF

St. Louis, Missouri





Right, reception room corner. Plans show lower three floors: ground (semi-basement) floor, shops where Institute makes its own equipment, archives, storage, caretaker's apartment; first floor, clinics; second floor, classrooms. Between clinical psychology room and observation room is a one-way-vision glass partition which permits observation of pupils or patients undergoing test without interference



CENTRAL INSTITUTE
FOR THE DEAF



Hydrieh-Blessing

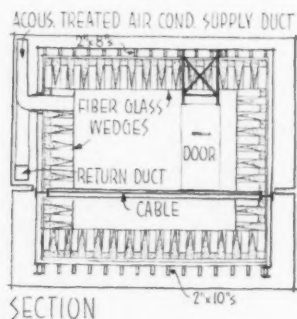
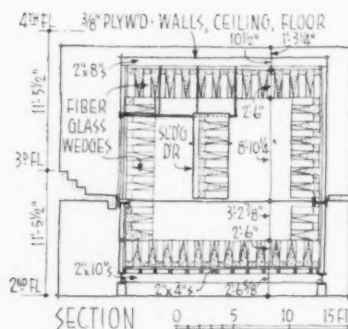


Top: rooms used by public, pupils or patients are furnished as pleasantly as possible. Throughout, floors are asphalt tile and ceilings acoustical tile. Below, speech clinic contains cubicles large enough for teacher, pupil and a parent or friend to help put pupil at ease

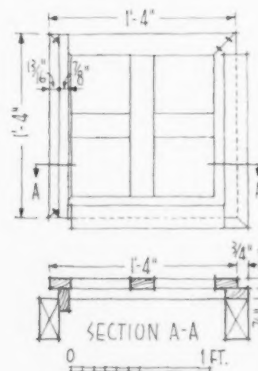
CENTRAL INSTITUTE FOR THE DEAF



SECTIONS THROUGH ANECHOIC CHAMBER showing sliding door



Showing air conditioning ducts



Wood frames for Glass fiber wedges

Hedrich-Blessing



Plan of third floor shows laboratory facilities, including rooms of various degrees of liveness with control rooms adjacent. Intensities, nature, effects of sound are studied electronically; effects on animals and people are accurately measured by recording nerve responses to the stimulus of sounds. Sections, detail and photo at right show anechoic ("without echo") chamber, photo above position of anechoic chamber is expressed on exterior by patterned brick panel; left, control room



PHOTOGRAPH BY [illegible] FOR [illegible]

PATTERSON-BRADFORD REXALL

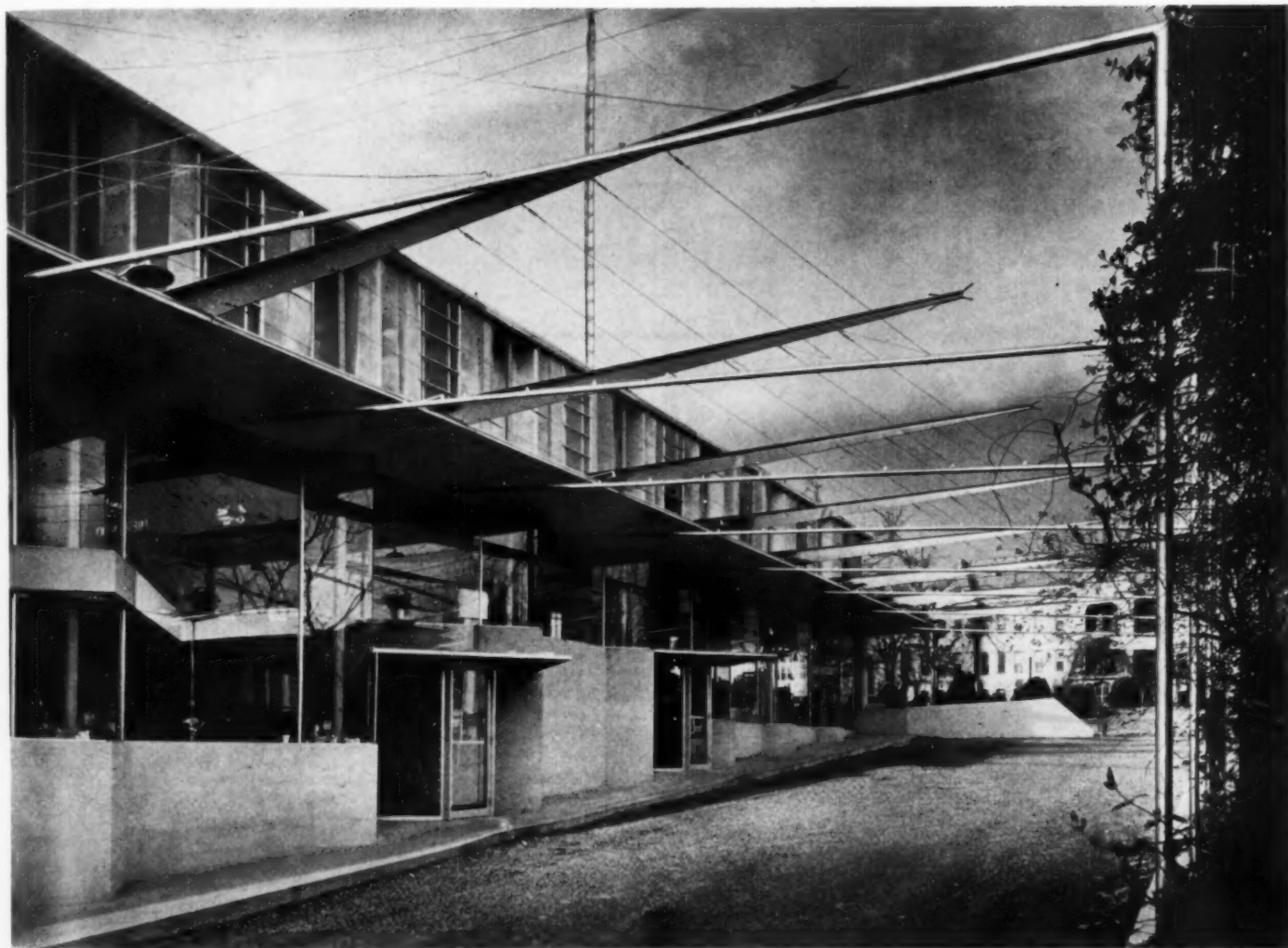
Joseph W. Molitor



DRUG STORE

Jackson, Mississippi

N. W. Overstreet & Associates, Architects



A CIRCULAR GLASS-ENCLOSED STAIR, angled show windows, and a wire trellis over the parking area give this store and office building in Mississippi a look of light openness very welcome in the South.

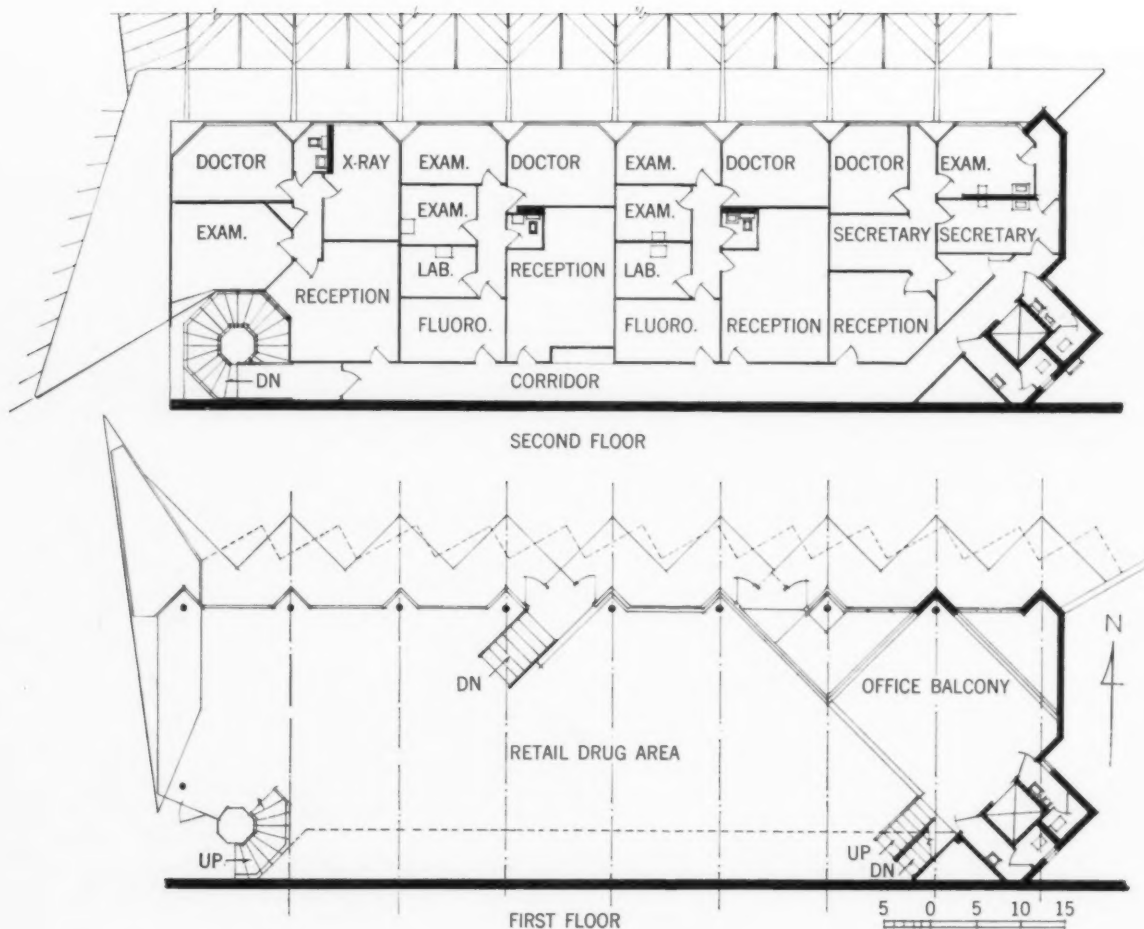
The building, designed by Robert K. Overstreet, an associate in his father's firm, is in a suburban business section of Jackson. The main floor is an unbroken sales area; glass walls along the north (parking) side and across the front permit customers to see the whole store as they enter, whether they arrive by car or by foot. The druggist, too, has a clear view of the entire floor from his office — a balcony at the rear, beneath which is tucked a florist's shop opening to the parking area. Storage space is in the basement.

The second floor of the building (plan next page) consists of several suites of doctors' offices, complete

with laboratories, X-ray and fluoroscopy rooms. An elevator is provided for the use of patients who do not wish to or cannot use the circular stairs at the front. Those stairs, of course, are not merely an attractive feature of the building, but a sound merchandising feature as well: from them the second-floor visitors get a full view of the store's displays.

The exterior of the building has a flair about it which again indicates the merchandising sense of the architect. Over the parking area is a trellis of aluminum wire and stock steel shapes trimmed to a delicate profile; vines eventually will cover the wires, cutting down show-window reflections and providing a cool greenness. Across the front is a reinforced concrete canopy, roughly triangular, from which protrude decorative aluminum rods.

DRUG STORE



Druggist's office balcony is 5 ft above main floor; site slopes to rear, permitting florist's shop below balcony. Heating and air conditioning equipment is in basement. Building is reinforced concrete, built-up roof, 4-in. glass wool thermal insulation

Joseph W. Molitor



COUSINS FURNITURE AND APPLIANCE STORE

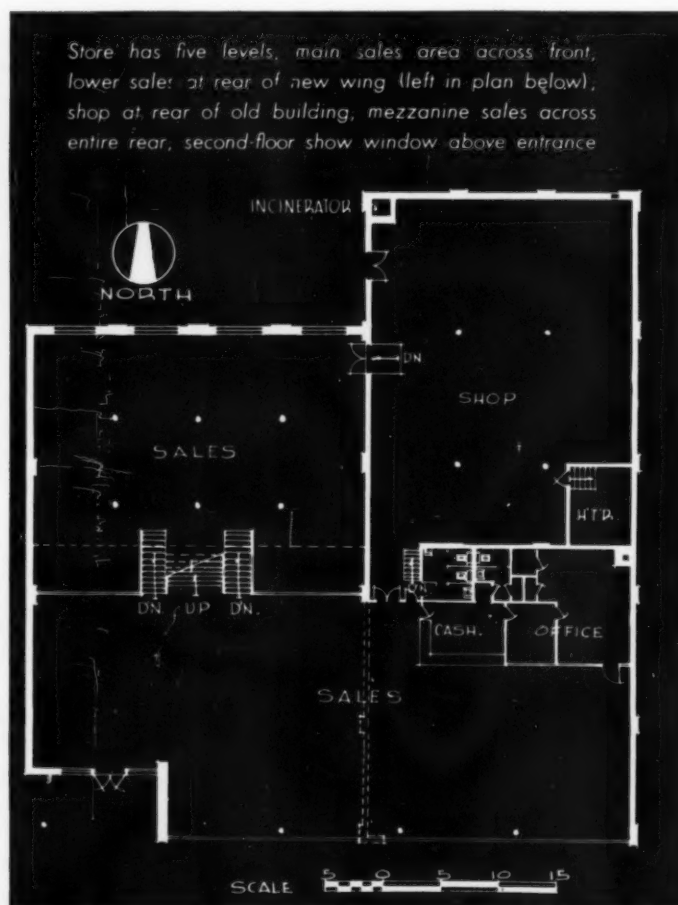
Johnson County, Kansas

Kivett & Myers, Architects

THE SITE of this store is on a highway leading to one of the better residential sections of Kansas City. Half of the building formally was a supermarket which was badly damaged by fire and subsequently remodeled; the other half (left on plan below) is new. The second

floor show window was the result of the owner's request for display space which could be seen by approaching motorists from the top of a nearby hill.

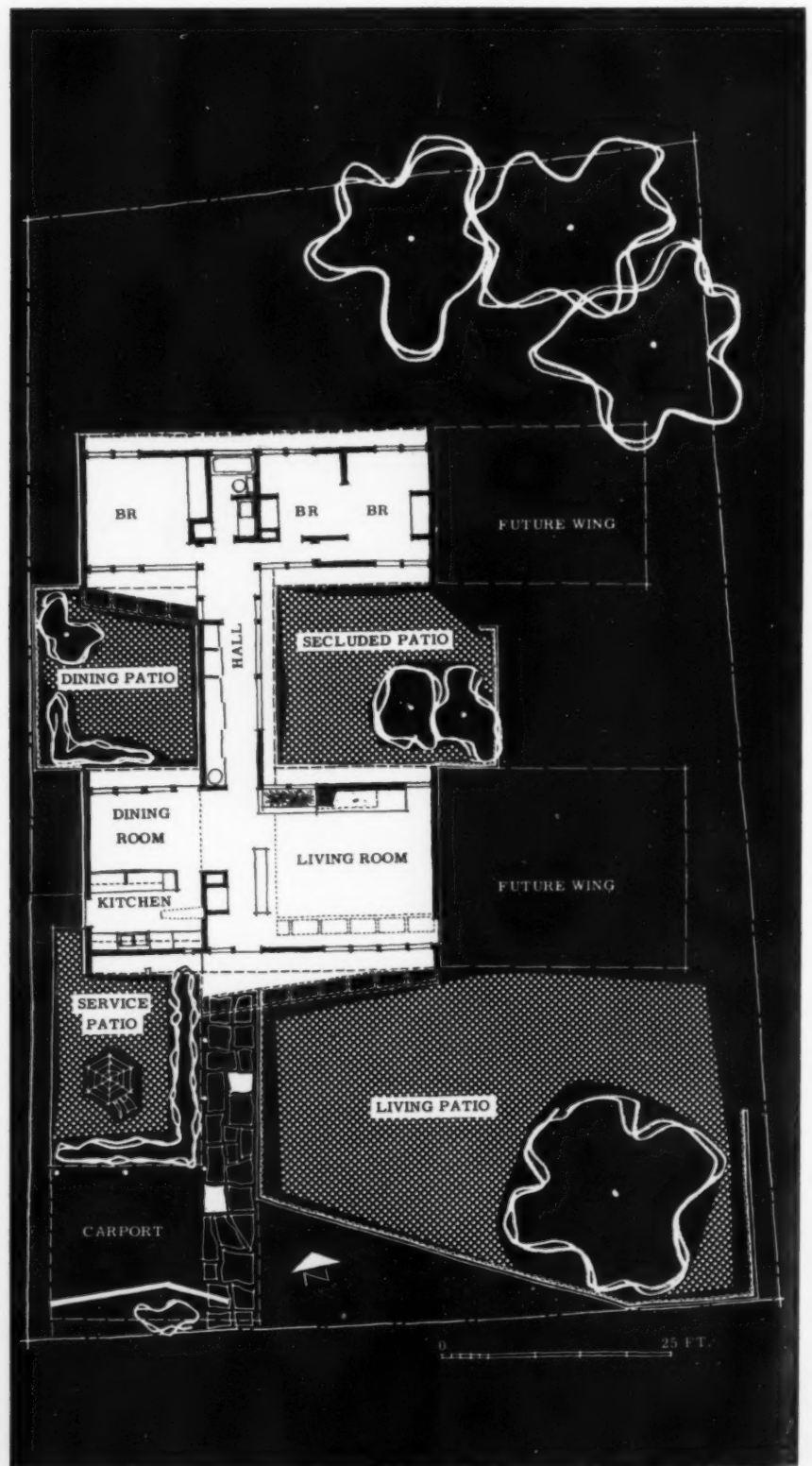
Foundations are stone (old portion of the building) and concrete block; exterior walls are red brick.



MODERN INTERPRETATION REMINISCENT

Residence for Mr. and Mrs. John J. Taylor.

The function of the courtyard—that dominant characteristic of houses in New Orleans' French Quarter—is here freshly interpreted in a contemporary suburban house. Situated on a small lot with other houses adjacent, and in a climate that is very hot for nine months of the year, the bi-nuclear plan (right) resulted from the owners' requirements of the utmost in privacy and adequate ventilation. Fences and unbroken wall areas add to seclusion, and high ceilings contribute to additional air circulation besides creating a spacious effect. Carport and extension of wings are planned for future



T

OF OLD FRENCH QUARTER

lor,

New Orleans, Louisiana

Curtis & Davis

Architects

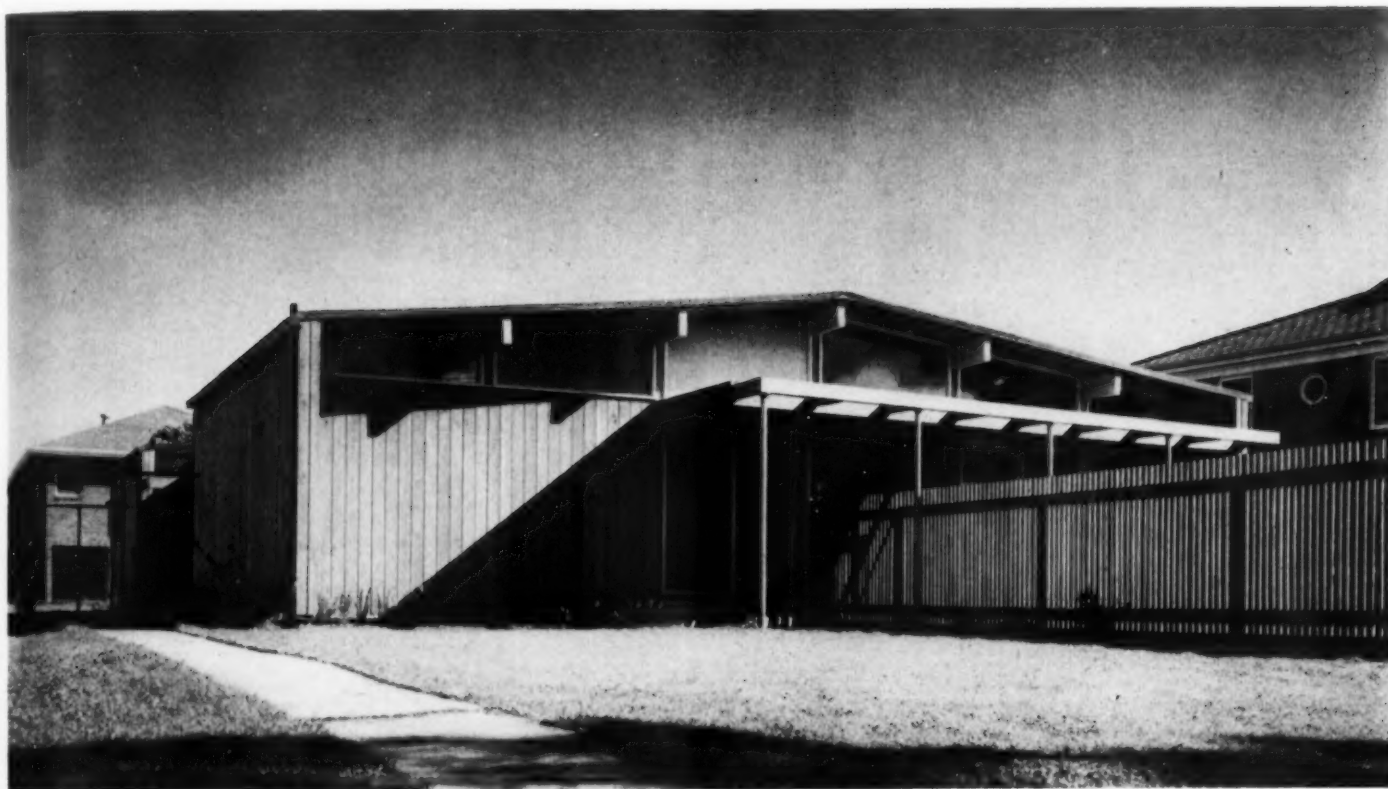
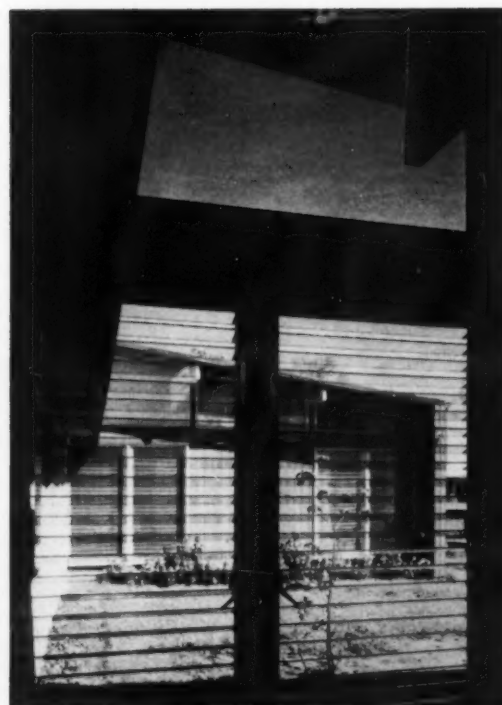


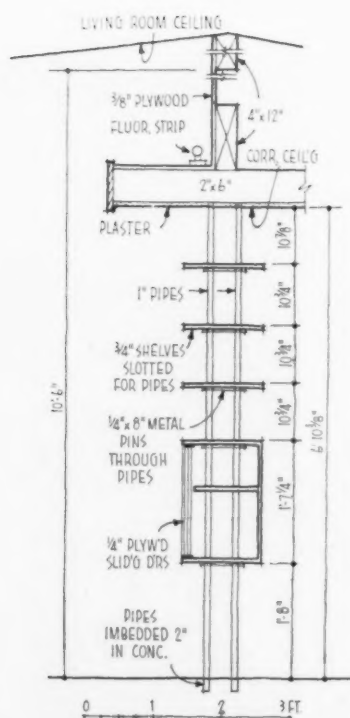
Photo above illustrates how proximity to neighboring residences is relieved by fences and unbroken wall areas. Below: bedroom wing and view of courtyard



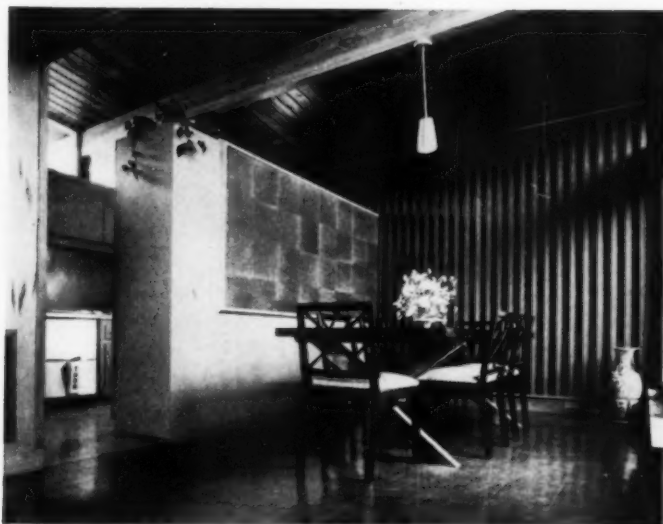
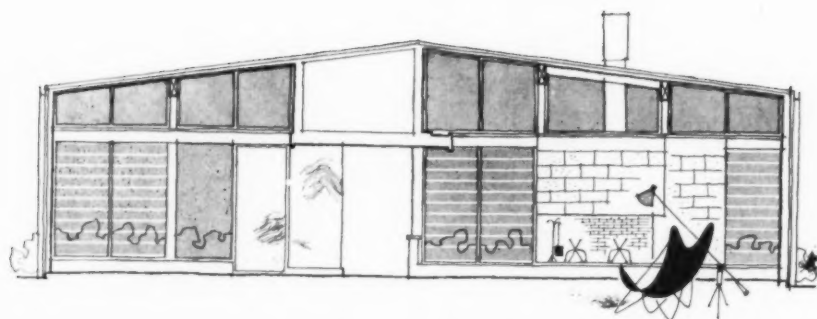
Joseph Muller



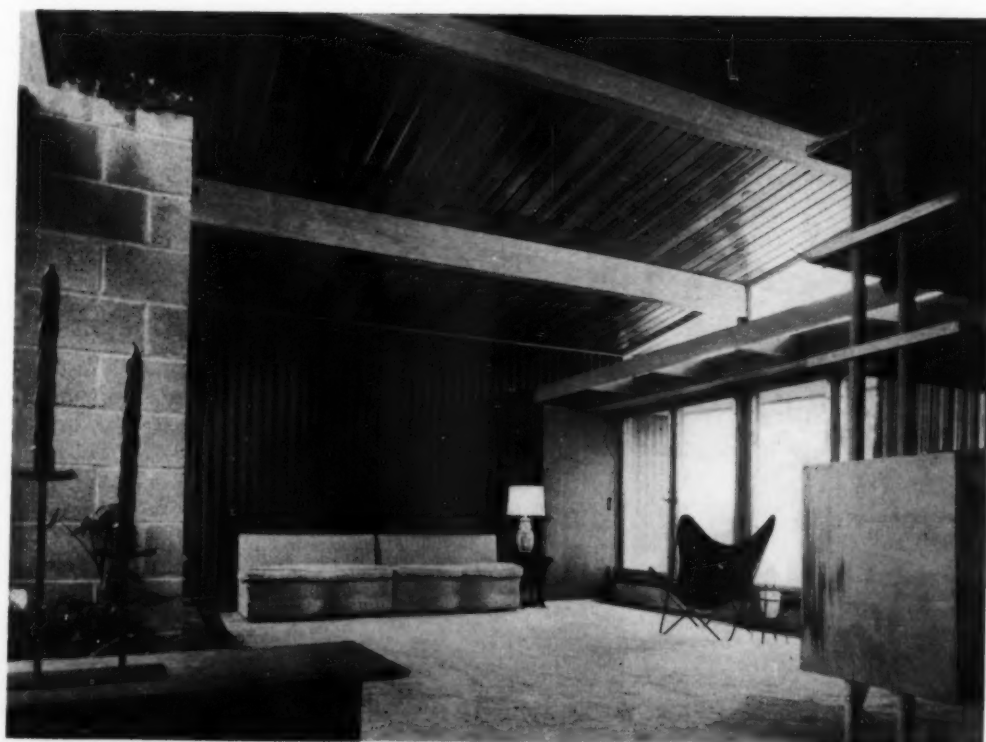
LOUISIANA HOUSE



DESIGNED for a young couple with two small daughters, the house is located in a sub-division near New Orleans. Built on land reclaimed from Lake Pontchartrain, the house rests on a concrete slab which is poured over 6-in. shell fill and membrane waterproofing. Framing and siding are of Southern yellow pine, protected by a creosote stain, and the roof is heat-reflecting white marble chip composition over 2 in. of rigid insulation material. Roof sheathing of 2-in. tongue and groove decking has been left exposed inside. A spacious atmosphere has been attained through very high ceilings—broken only by interior extension of outside overhangs and a lowered ceiling in connecting corridor. Radiant heating system is located above connecting corridor, with two forced warm air heaters, one at either end. Outdoor patios may be reached from any part of the house, and childrens' room leads directly to play yard. Except for the bathroom, none of the partitions extends to the ceiling, contributing to improved air circulation throughout the house.

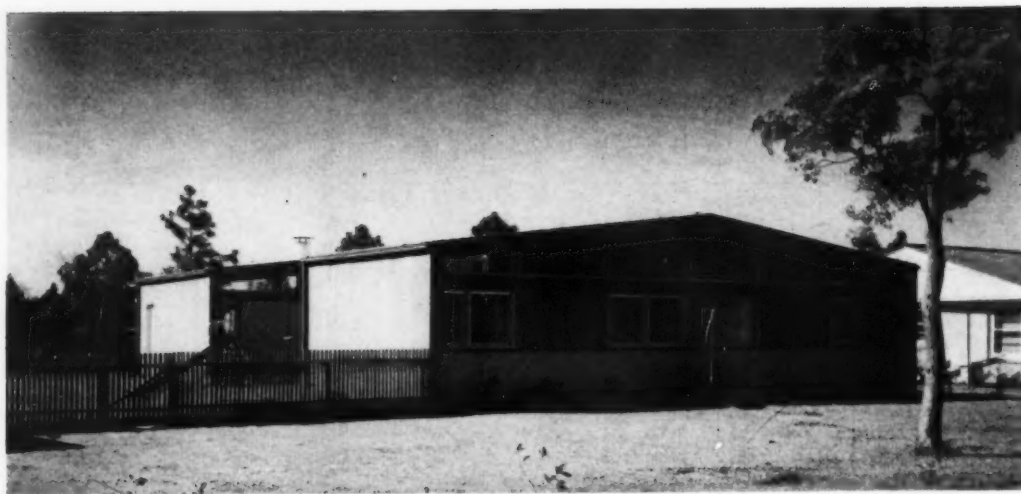


Interiors are pine, plywood and corrugated asbestos sheeting. Future mural will be set in space provided on dining room wall. Detail at top is section of dining and living room wall. Bookcase (opposite) and low corridor ceiling help to recall domestic scale



Joseph Malliar

LOUISIANA HOUSE



Joseph Molitor

All openable portions of glazed walls are fitted with screened adjustable glass louvers, easily operated and providing excellent ventilation. Floors are asphalt tile and there is an exceptional amount of storage space for a house of this size. High ceilings are appropriate for Louisiana climate



ARCHITECTURAL RECORD'S
BUILDING TYPES STUDY
NUMBER 191



Roger Sturtevant

HOSPITALS

IN THE LAST YEAR or so the earlier Hill-Burton hospitals have been completed, adding substantially to the health facilities of the country. Only now are we seeing the tangible results of many years of study and effort, by Marshall Shaffer and his staff of architects in the U.S. Public Health Service, by many hospital agencies in the states, and by architects who have translated it all into building plans.

It has been interesting to watch so much concerted study of hospital planning, beginning a decade or more ago, and still going on. Major developments include: "Coordinated Hospital Service Plan," ARCHITECTURAL RECORD, Aug. 1945; "Elements of the General Hospital," A R, June 1946; "Plans of General Hospitals for the Coordinated Hospital System," A R, Jan. 1948; and revisions of the elements, A R, April 1952. Reprints of these U.S. Public Health Service reports have been circulated by the thousands, have become a considerable compendium of information on hospital planning. Incidentally, they are all being brought up to date and will soon be published in book form.

It has been especially interesting to see how these planning tools have been used. There were a few dire predictions that architects would "copy them cold," that "standard plans" would block advances in planning, would stifle initiative, would hamstring architects with bureaucratic control. But none of these woeful things has happened. Architects have welcomed the information, have used various elements as suggested, have learned much about planning, and they have planned better hospitals. There has been nothing restrictive or arbitrary in the process. Architects have invariably adapted the information to individual needs and circumstances, have invented new combinations, incorporated new ideas, have satisfied special requirements or whims of hospital boards and administrators, have added flexibility and expandability. The various planning aids have encouraged many architects to enter what was once a specialized field, have helped them

learn about hospitals, and have encouraged them to go on learning.

Several important developments have happened since the program started:

1. Sizes of hospitals have followed individual community needs. There are many more small hospitals than first proposed, and the really small ones have better equipment than was originally considered possible.

2. The expandable hospital has arrived — the "50-bed hospital on a 100-bed chassis," for example.

3. More equipment has become the rule, not only for contemplated expansion, but also for early ambulation. As the hospital stay has shortened, the use of hospital facilities has increased, so hospitals must now be planned for this increased turnover.

4. Personnel problems have also added to equipment. Hospital management is using the tricks of factory management, using more mechanical gadgets to cut labor costs.

5. Many medical developments have been accommodated in planning — the recovery room, for example, or provisions for a few mental patients in the general hospital, or increased toilet facilities or other devices to encourage self-help by patients. Or more facilities for occupational therapy, or more dayrooms for ambulant patients. Or, in some instances, more diagnostic facilities for out-patients.

6. Costs have skyrocketed. Federal funds, against present costs, have become a mere trickle. Nevertheless the Hill-Burton program has made hospital care available in many communities which never had it before, has "sold" hospital care, and the demand is still increasing.

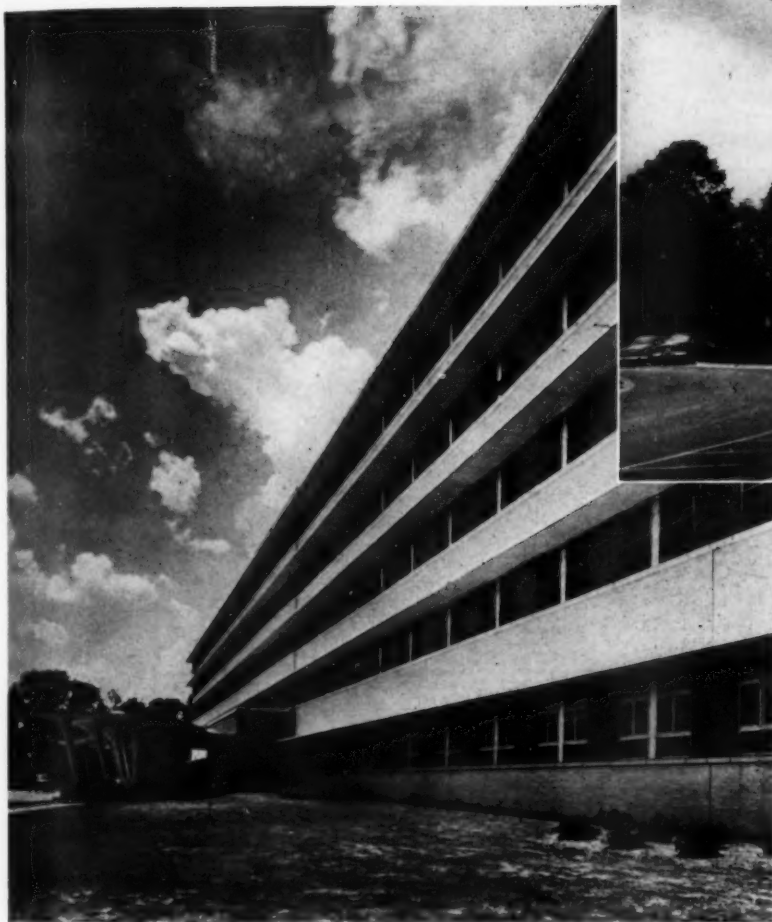
This Building Types Study comprises six carefully selected Hill-Burton hospitals, in representative sizes from 20 to 285 beds. All show evidences that the basic planning information has been well assimilated; more important perhaps, they all show great ingenuity by their individual architects.



Thigpen

Mobile Infirmary occupies a large wooded site, formerly a golf club. There is approximately a mile of roadways and several acres of parking space. Scheme contemplates later construction of a nurses' building for residence, recreation and training of nurses





*Mobile Infirmary, Mobile, Alabama
Platt Roberts & Company, Architects*

Reg. F. Taylor, Mechanical Engineer

R. S. Christiansen, Structural Engineer

W. C. Pauley, Landscape Architect

Clyde Sibley, Medical Consultant

285-BED HOSPITAL PLANNED FOR TRAINING

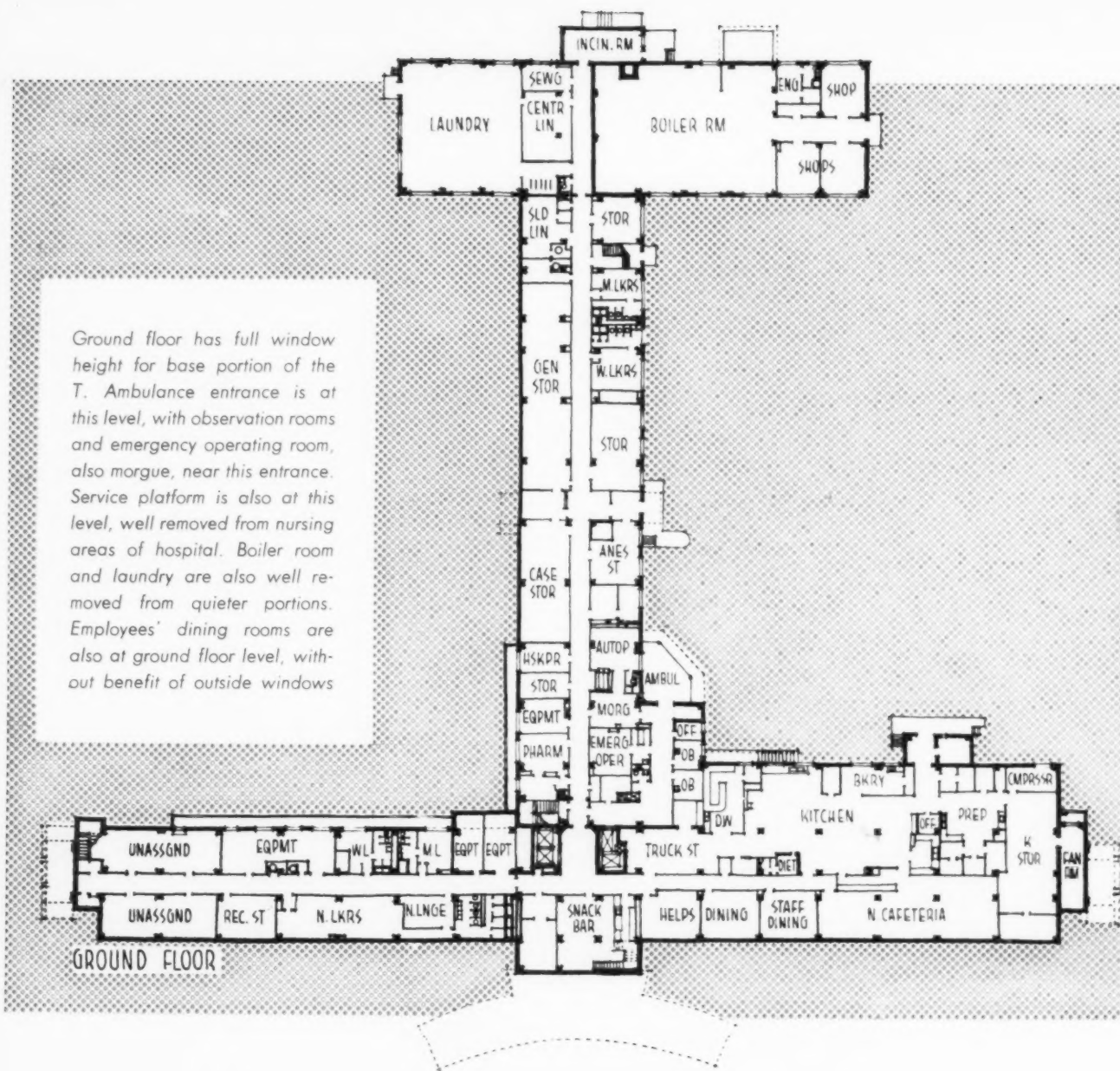
THOUGH it has not at present fully reached that status, this hospital fits into the coordinated hospital system as a teaching hospital. It is quite large, 285 beds, and is one of relatively few of its classification to have assistance from the Hill-Burton program.

Perhaps it should be explained that this is primarily a hospital, not an educational institution, and its classification for teaching has not greatly affected its planning. It is, in short, a normal general hospital, larger than most in the program, with the usual elements and facilities but more of them. The final scheme contemplates a nurses' building, with living quarters, recreational and teaching facilities. Meanwhile there is a teaching room in connection with each nurses' station, where instruction can be given.

The design assumes visiting doctors, no provisions being made at the present for interns or resident doctors;

the building can be expanded to fulfil these requirements if they prove necessary.

The plan of the hospital is interesting; in general it is conventional, a T form for the separation of medical facilities and nursing units. It might be said that the scheme is a combination of the horizontal and vertical concepts of hospital planning, striking a reasonable balance between horizontal and vertical travel distances. The distances through the medical departments seem fairly long, but with departments the size of these, a great deal of walking is unavoidable, no matter how the departments are disposed. And confining the building to five major floors obviates certain of the vertical travel. Where travel distances are most important — within the nursing units — it is well confined, with nurses' station and facilities centrally located, and with corridors at least partially double-loaded. Each nursing



Thigpen



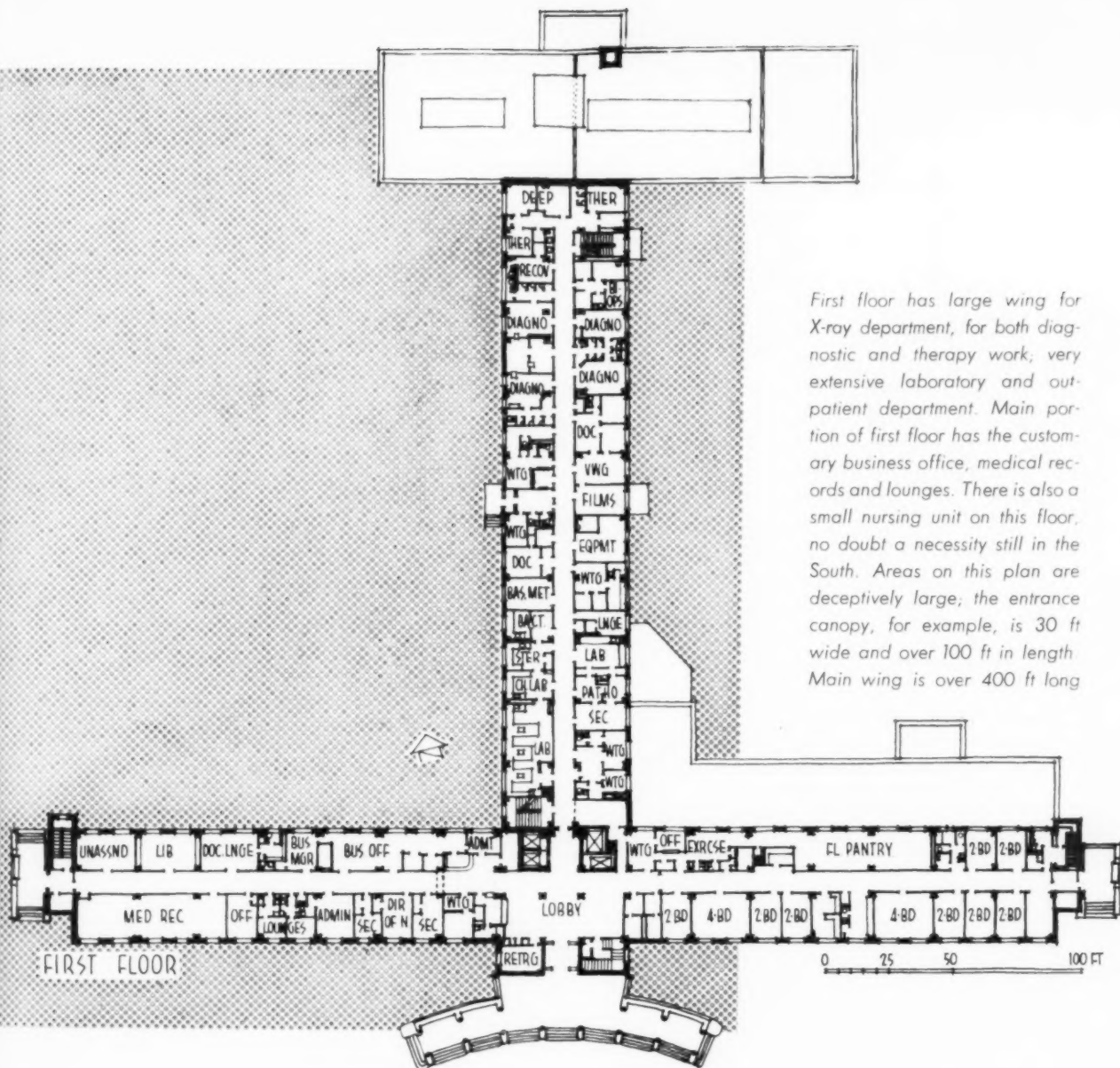
unit has a nominal capacity of 26 beds, the two-bed rooms without toilets placed closest to the nurses' station.

The building is reinforced concrete frame construction with concrete floor and roof slabs and masonry curtain walls. Face brick is light buff and dark maroon. Architectural stone copings are light buff, spandrels dark coral pink. Concrete hoods over windows and portico are painted concrete; windows are aluminum.

In the interior, walls and ceilings are generally of plaster. Floors are ceramic, quarry, asphalt or rubber tile and terrazzo. At present air conditioning is confined to public areas, operation, delivery and service suites, though provisions have been made for air conditioning bedrooms where desired.

The site is exceptionally good; it is close to the city but quite beautiful. It was originally a golf course.

Costs are given at \$3,100,000 for building construction, \$4,500,000 including equipment. Total area is 210,000 sq ft.



First floor has large wing for X-ray department, for both diagnostic and therapy work; very extensive laboratory and outpatient department. Main portion of first floor has the customary business office, medical records and lounges. There is also a small nursing unit on this floor, no doubt a necessity still in the South. Areas on this plan are deceptively large; the entrance canopy, for example, is 30 ft wide and over 100 ft in length. Main wing is over 400 ft long



Upper floors are the same in the main portion, with two nursing wings per floor, differ as shown in the rise of the T: obstetrical and nurseries on the second, surgical department on the third, pediatrics on the fourth. Pediatrics section is exceptionally large and well-equipped



Opposite page: cashiers' counter is conveniently but unobtrusively placed near main lobby but not within it. Above: lobby is finished in pink marble and is air conditioned. Right: outpatient department opens directly off lobby





Opposite page, upper: typical private room, equipped with window air conditioning unit; center: typical two-bed room; lower: isolation room, looking toward sub-utility room. Below: one of the nurseries, as seen from the examining room where doctors see babies



Thigpen

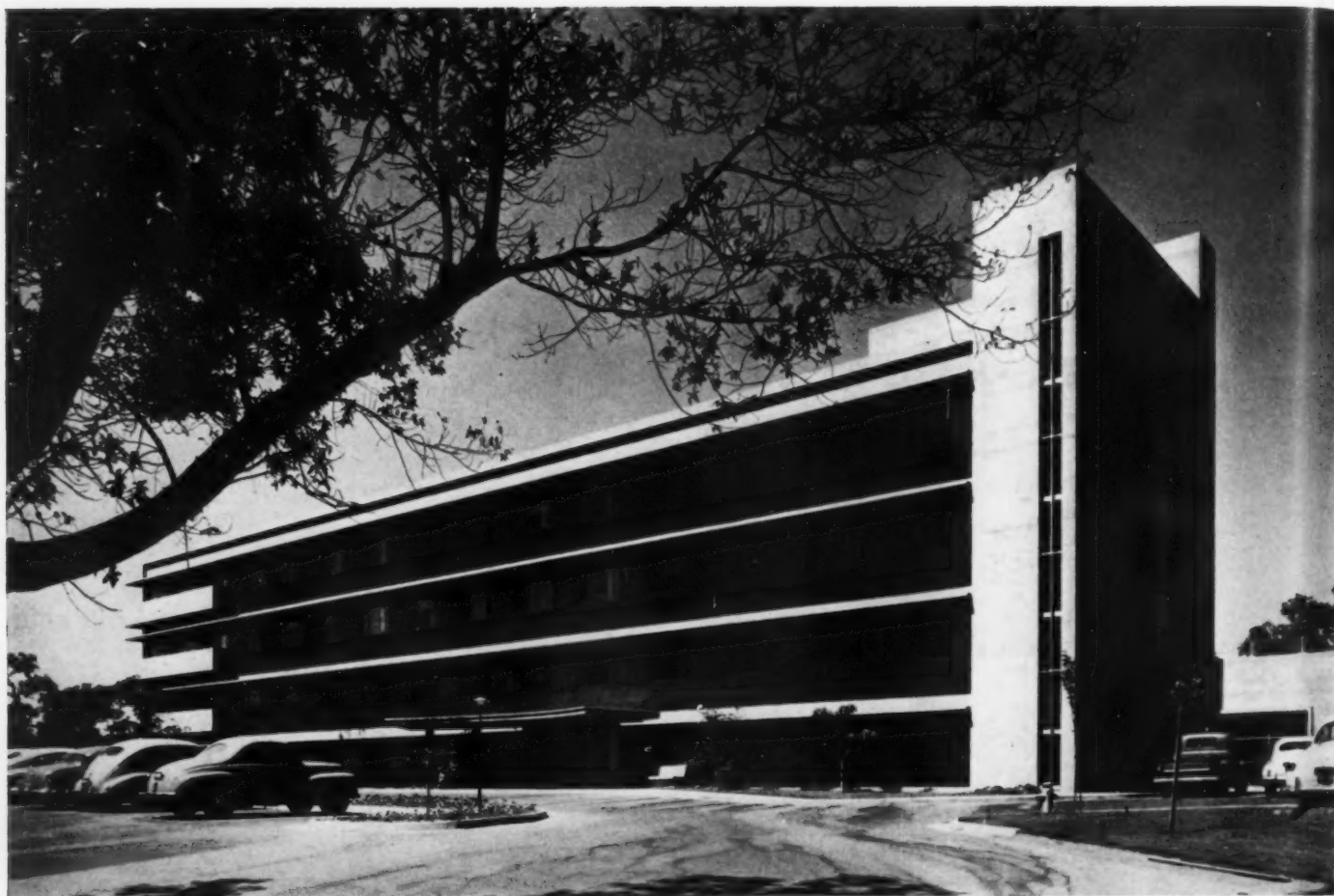




Opposite page: chapel for worship by patients or personnel. Left: food carts for distributing meals from main kitchen to floor pantries. Opposite page, below: general laboratories. Below: one of the major operating rooms in use. Lighting is carefully controlled, with light-tight shades at windows, plenty of general lighting to obviate strong brightness contrast between strong local light and the surrounding background of the room

Thigpen





PACE-SETTER HOSPITAL STRESSES EQUIPMENT

Marin General Hospital, Greenbrae, Calif.

Robert Stanton, Architect

Dr. J. A. Katzive, Consultant

Henry X. Jackson, Consultant and Administrator

MacD. Perkins, Structural Engineer

Clyde E. Bentley, Mechanical Engineer

Lawrence Halprin, Landscape Architect



A PACE-SETTER in many respects, this hospital is especially notable for its equipment and facilities. Nominally a 100-bed hospital, it has operating department and adjunct facilities for a hospital perhaps twice that size, not primarily because large expansion is planned, but rather because early ambulation and modern medical techniques mean that medical facilities are more important than bed count.

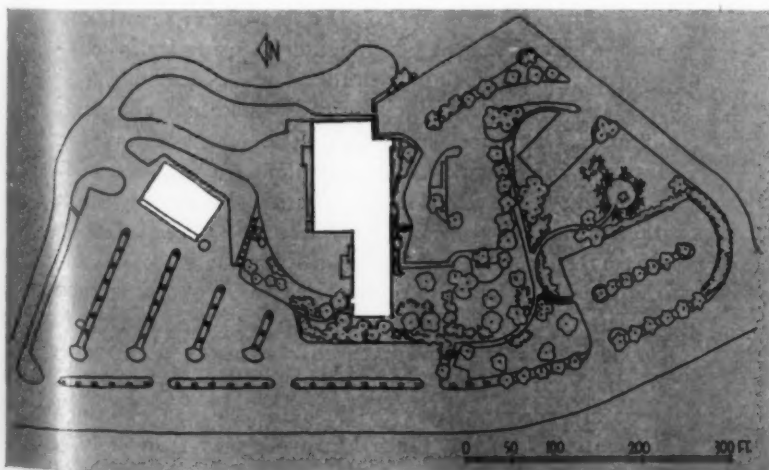
The operating suite has five major operating rooms. Though two of these are specially designated — orthopedic and cystoscopic — both are full-scale and fully equipped. In addition, the two in the emergency department — one designated as fracture room — are also full-scale operating rooms. There is also, of course, the separate obstetrical suite, with two delivery rooms.

The dictate of full medical facilities has added heavily to the equipment of this hospital in many departments. There is, for example, a variable temperature control room (fourth floor). It is used as a diagnostic aid for cardio-vascular disorders. The room may be taken through a series of rapid temperature changes from 0 to 75 deg C; by measuring the response or the rate of skin temperature change, the extent of damaged nerves and tissues can be determined. There are two allergy rooms, with air conditioning and electrostatic filters. There are two "maximum security" rooms. Laboratory and X-ray departments are exceptionally well equipped, also the physical therapy department. Both pediatrics and nursery sections are especially well planned.

Equipment generally is generous. For a few items: toilet facilities in all rooms; two-way communication system from bedside to nurses' station; piped in oxygen;

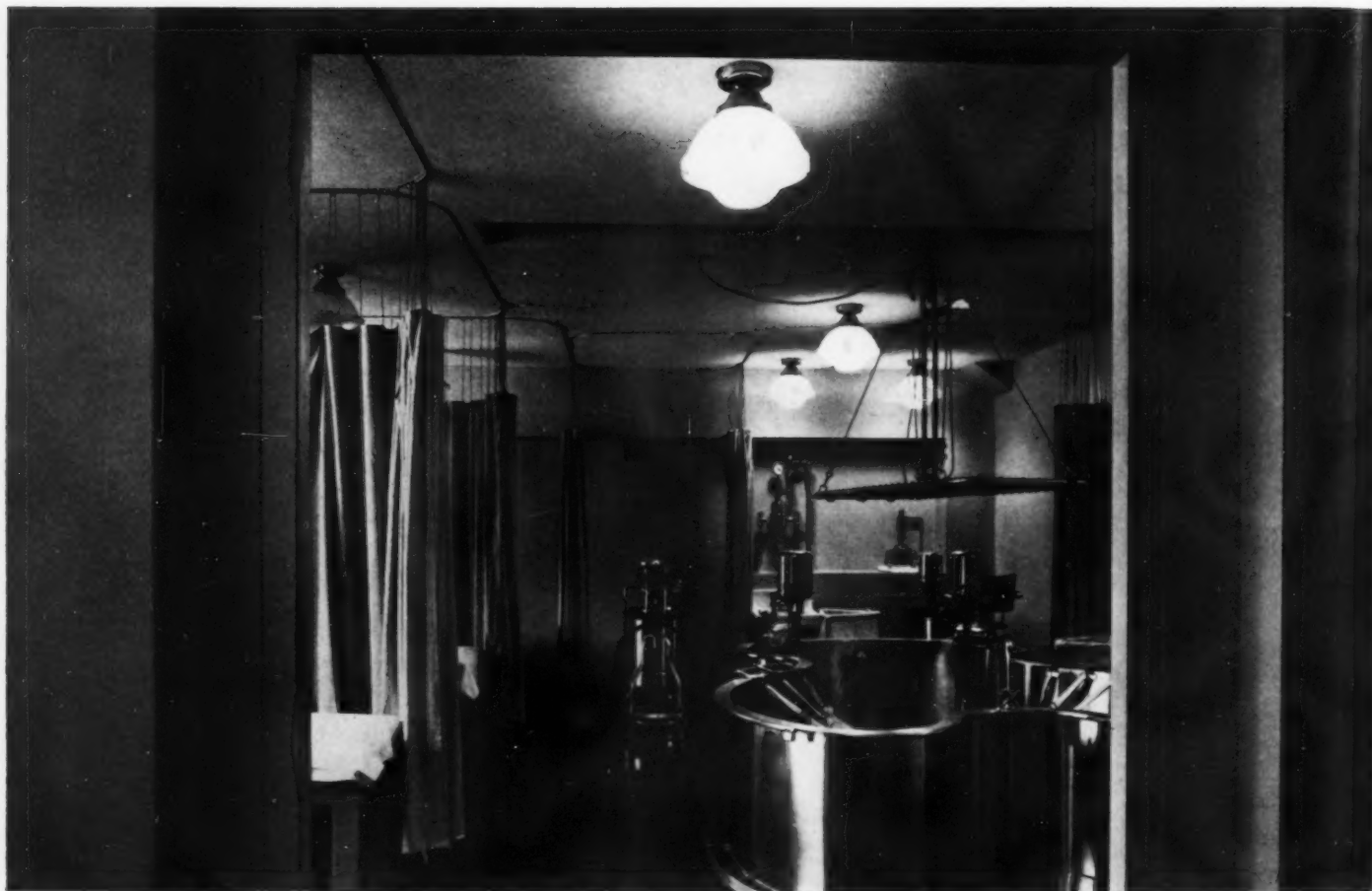


Roger Sturtevant



Building in rear is small storage warehouse





Roger Sturtevant

Physical therapy suite (first floor) is compact, but exceptionally well equipped, and is very heavily used



telephone jacks in all rooms; mail chutes from nurses' station to office; central dictating system, with 12 sub-stations, for doctors to dictate their records. The need for cracked ice on the floor "has been completely obviated by piping ice water to the nourishment rooms, and using vacuum jugs at bedside, and by using iceless oxygen tents and freez-a-bag units instead of ice bags."

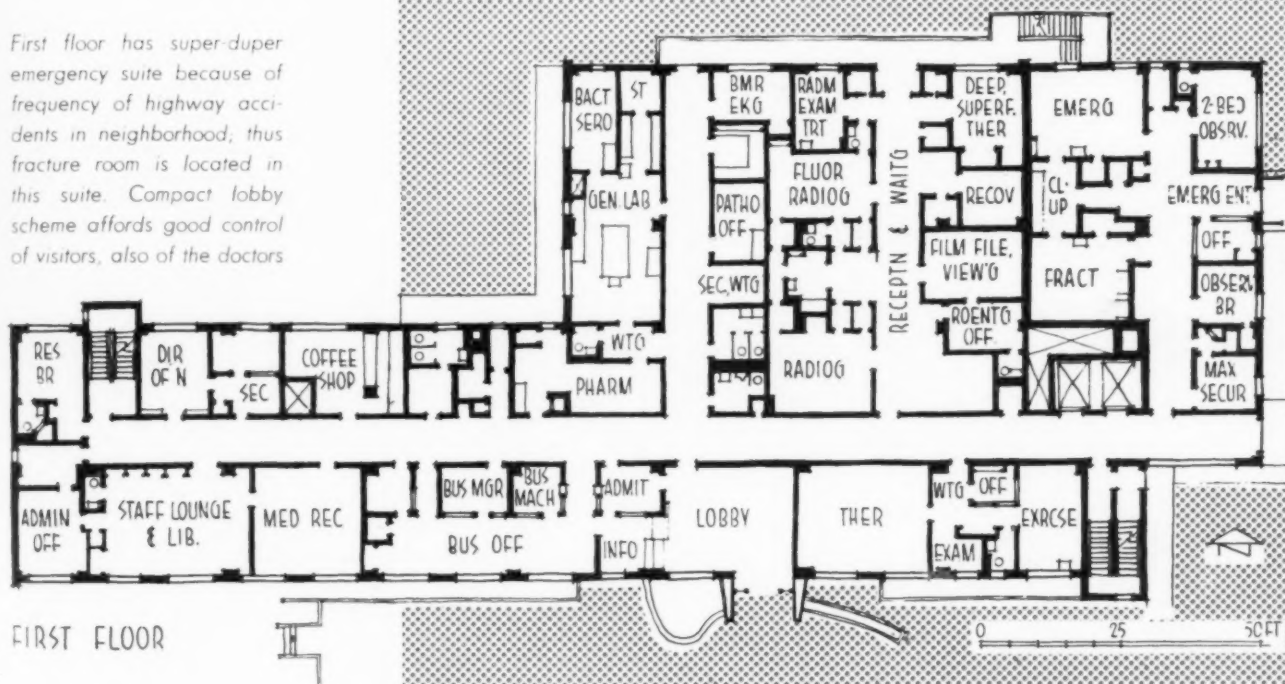
The building is of reinforced concrete frame and exterior walls and sunshades. The concrete has the integral color that has become almost a trademark of Stanton's hospitals. The color is a light salmon pink; the surface is sometimes sandblasted to give the effect of travertine. The integral color, plus the use of aluminum sash, virtually obviates exterior maintenance expense.

The site is large and naturally beautiful, with views of that famous Mt. Tamalpais, the view exposure fortunately corresponding to the desirable sun exposure for patients' rooms. Since Marin County is entirely a vehicular community, parking space has been provided for more than 300 cars.

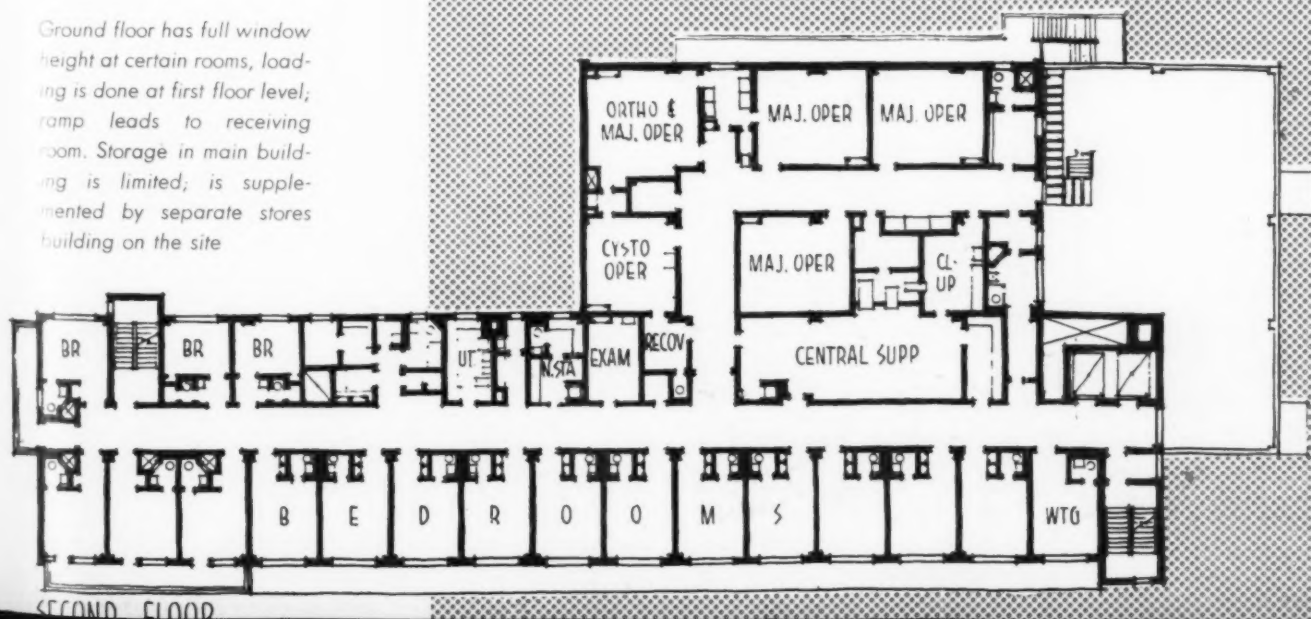
Central supply is part of surgical suite, but can operate separately; supplies other floors by dumbwaiter. Virtually all bedrooms face south



First floor has super-duper emergency suite because of frequency of highway accidents in neighborhood; thus fracture room is located in this suite. Compact lobby scheme affords good control of visitors, also of the doctors

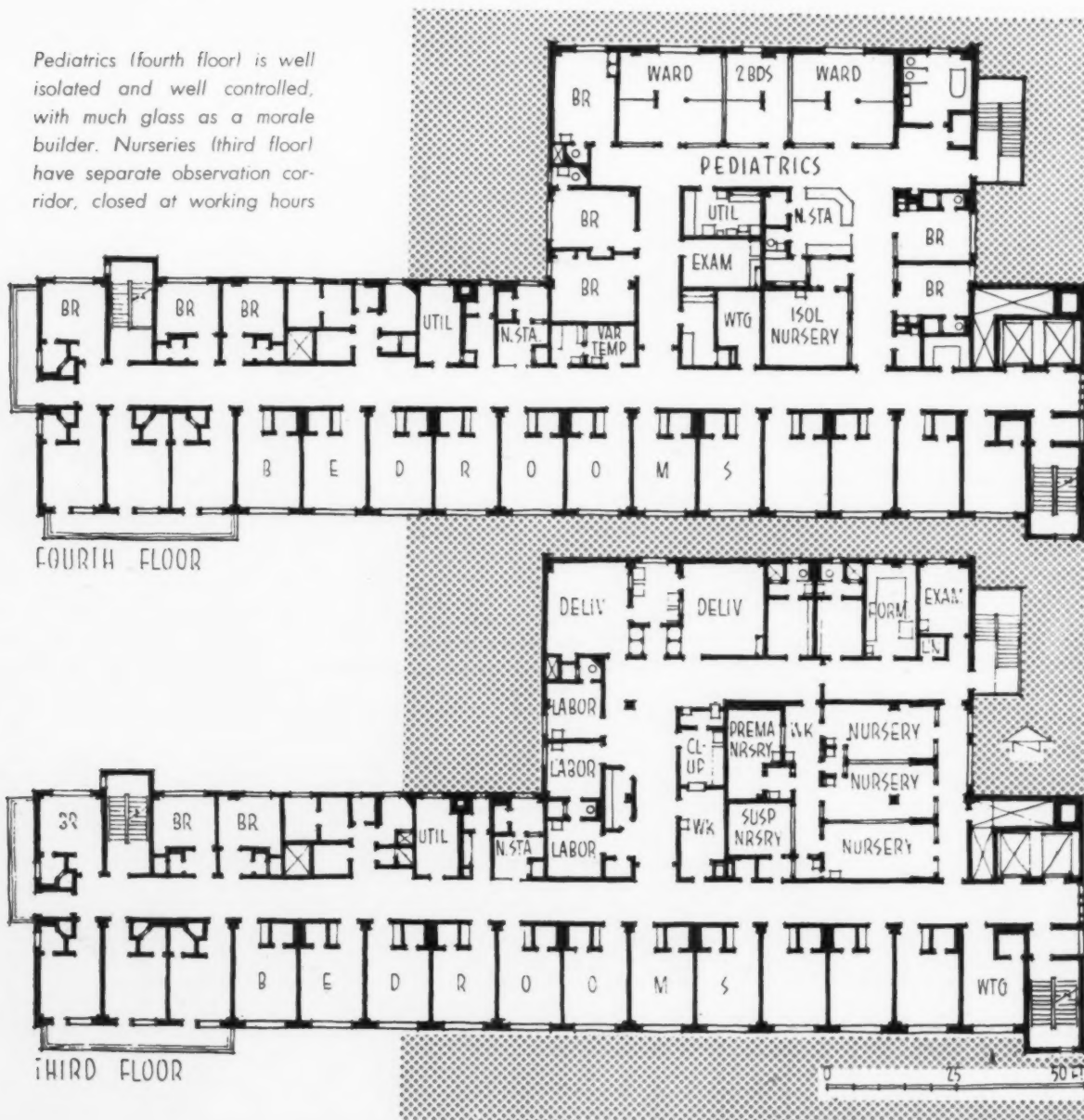


Ground floor has full window height at certain rooms, loading is done at first floor level; ramp leads to receiving room. Storage in main building is limited; is supplemented by separate stores building on the site





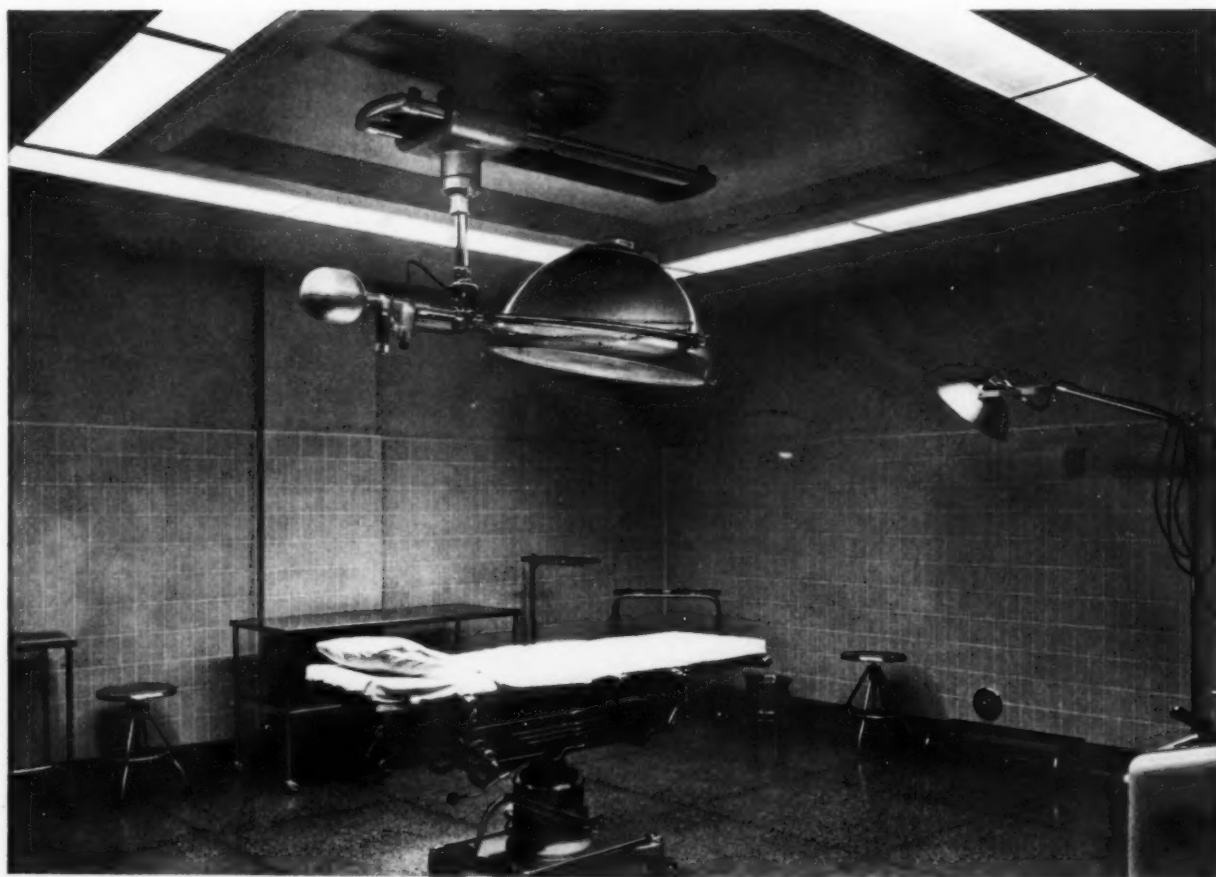
Pediatrics (fourth floor) is well isolated and well controlled, with much glass as a morale builder. Nurseries (third floor) have separate observation corridor, closed at working hours





Left to right: nurses' station; view of private room; nursery observation gallery; laboratory. Below: one of the major operating rooms. Note the peripheral lighting around operating table, to keep down brightness contrasts for surgeons

Roger Sturtevant



Laundry works on assembly line basis, has full daylight. Right: nurses' station for pediatrics



Below: kitchen uses individual tray system, with preheated pyrex units to keep food hot. Trays are prepared, to individual orders, on one serving counter. Kitchen is quite compact

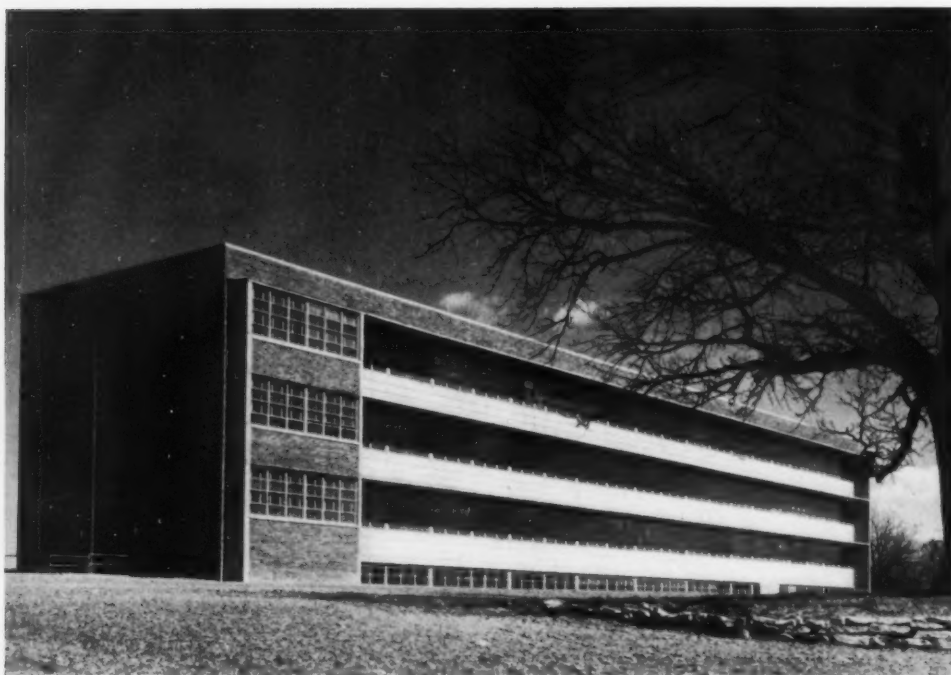


Roger Sturtevant



Above: glass partitions in pediatric departments tend to keep children amused and cooperative. Upper right: view of main lobby, looking toward information desk. Right, center: information desk is just that — cashier's counter is recessed off the main corridor. Right: another view of nurses' station in pediatric department





Thigpen



Ottumwa Hospital,

Ottumwa, Iowa

Morgan-Gelatt &

Associates, Architects

133-BED HOSPITAL PLANNED FOR EXPANSION

OTTUMWA HOSPITAL is a representative example of planning for expansion; it replaces a hospital group which for 60 years had struggled with space problems, so that its planners were not intending to get caught within the foreseeable future with overcrowding. The normal capacity of the new building is put at 133 beds; it might take 175 patients under emergency conditions. But it can be expanded in virtually all directions, and has facilities all ready to take considerable extension.

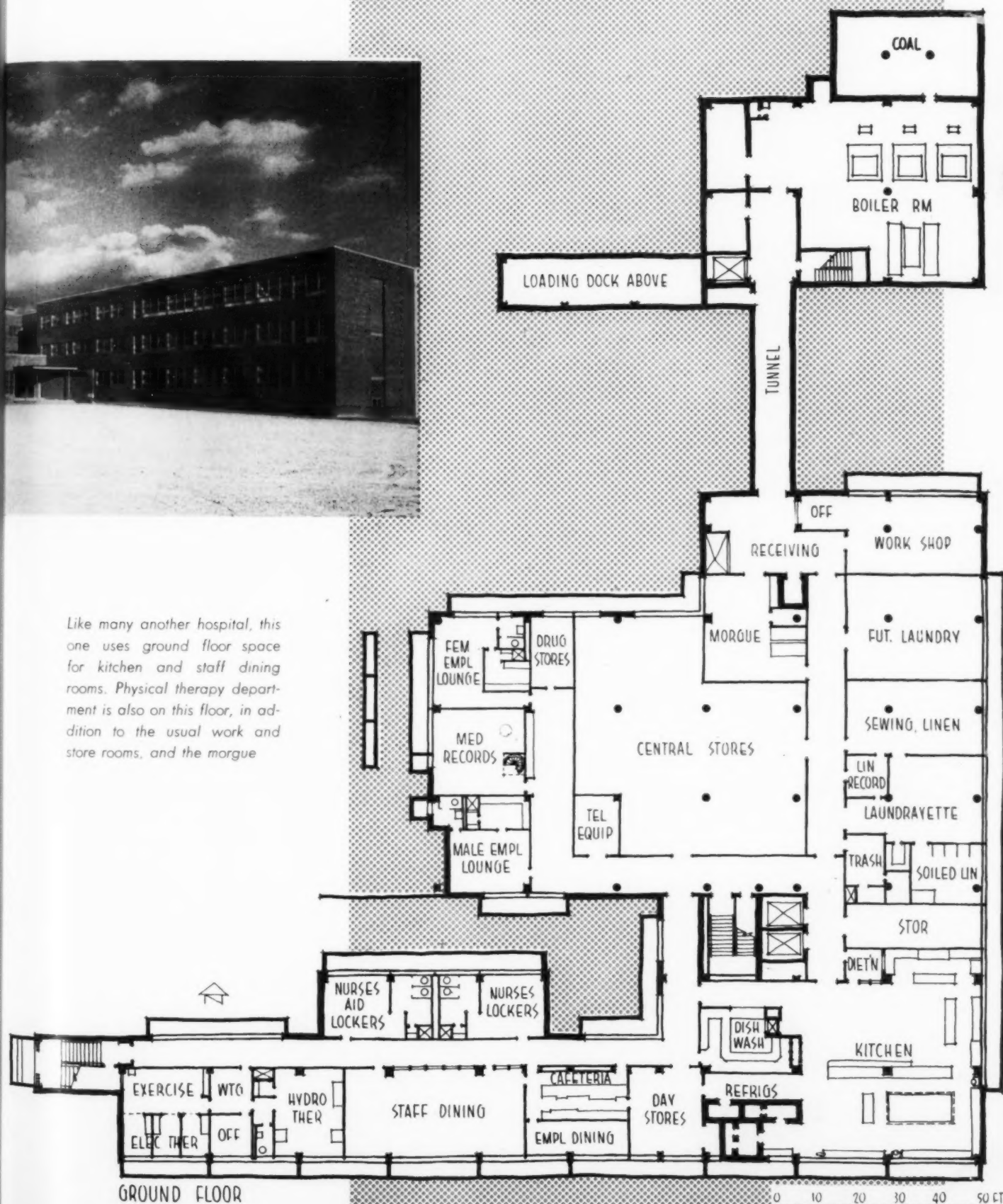
The building now is L-shaped; in the next stage it

will become T-shaped; and finally it might take the form of an X with an extension out from the top of the T. All of this growth is planned to leave undisturbed the central portion containing kitchen area, administration, laboratories, surgical and obstetrical departments.

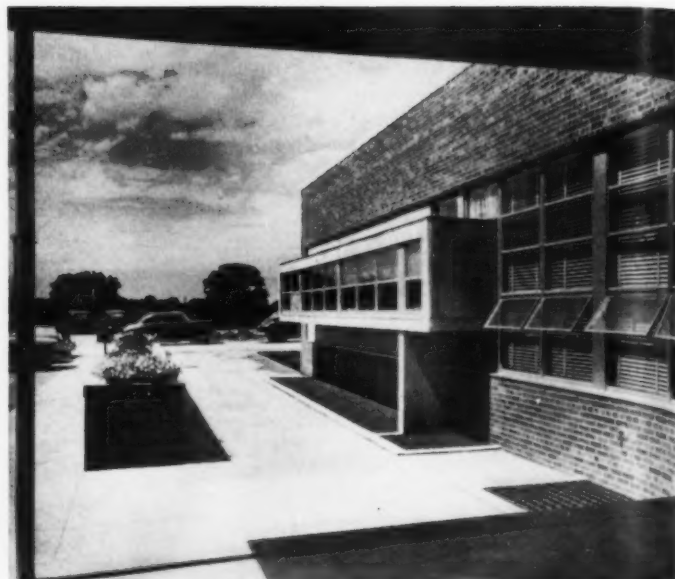
The building is oriented on a large site to give most of the patient rooms a southeast exposure, both in the present form and in the first expansion of the nursing wings. In the nursing portion the plan uses a single-loaded corridor, with only nursing station and utility



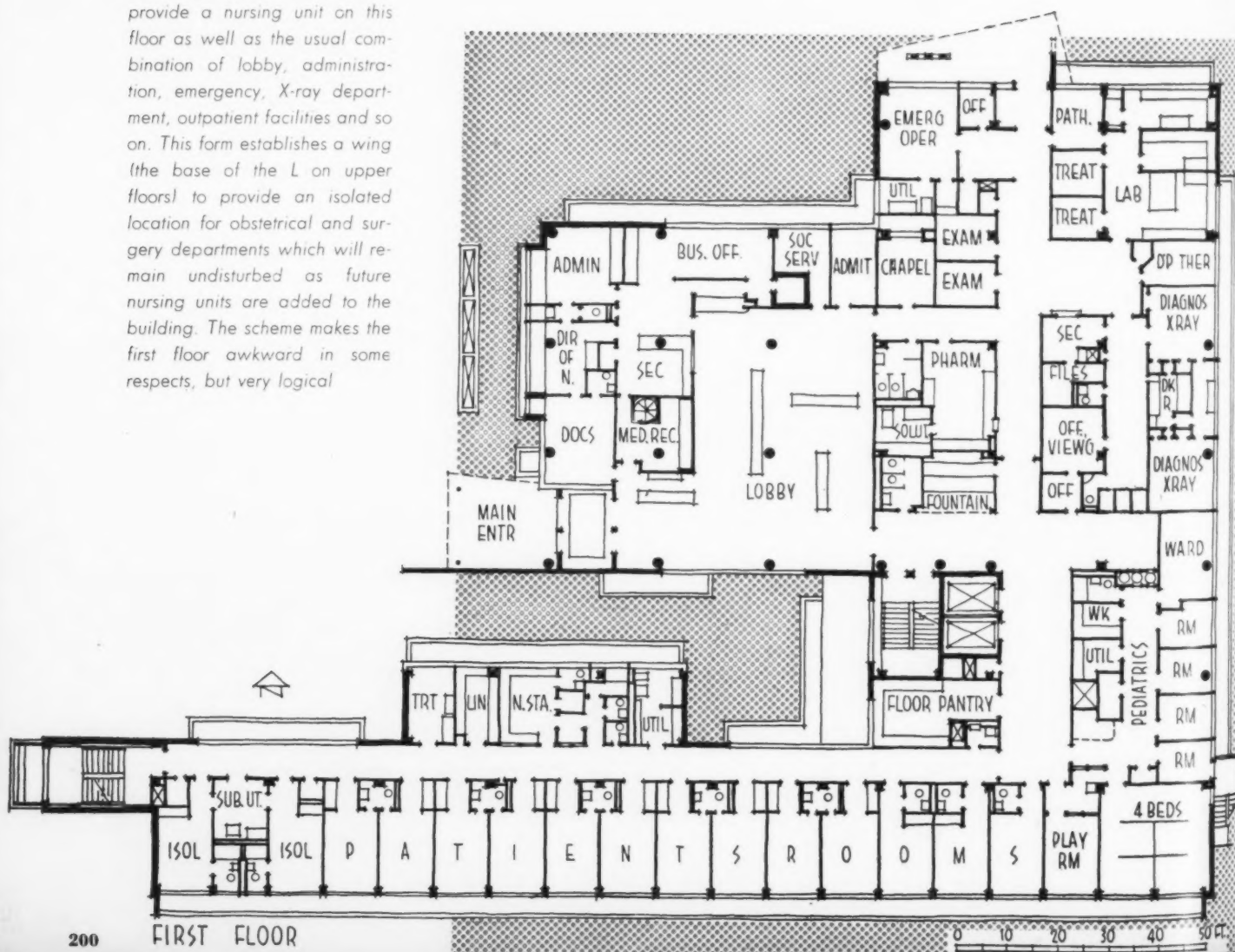
Like many another hospital, this one uses ground floor space for kitchen and staff dining rooms. Physical therapy department is also on this floor, in addition to the usual work and store rooms, and the morgue

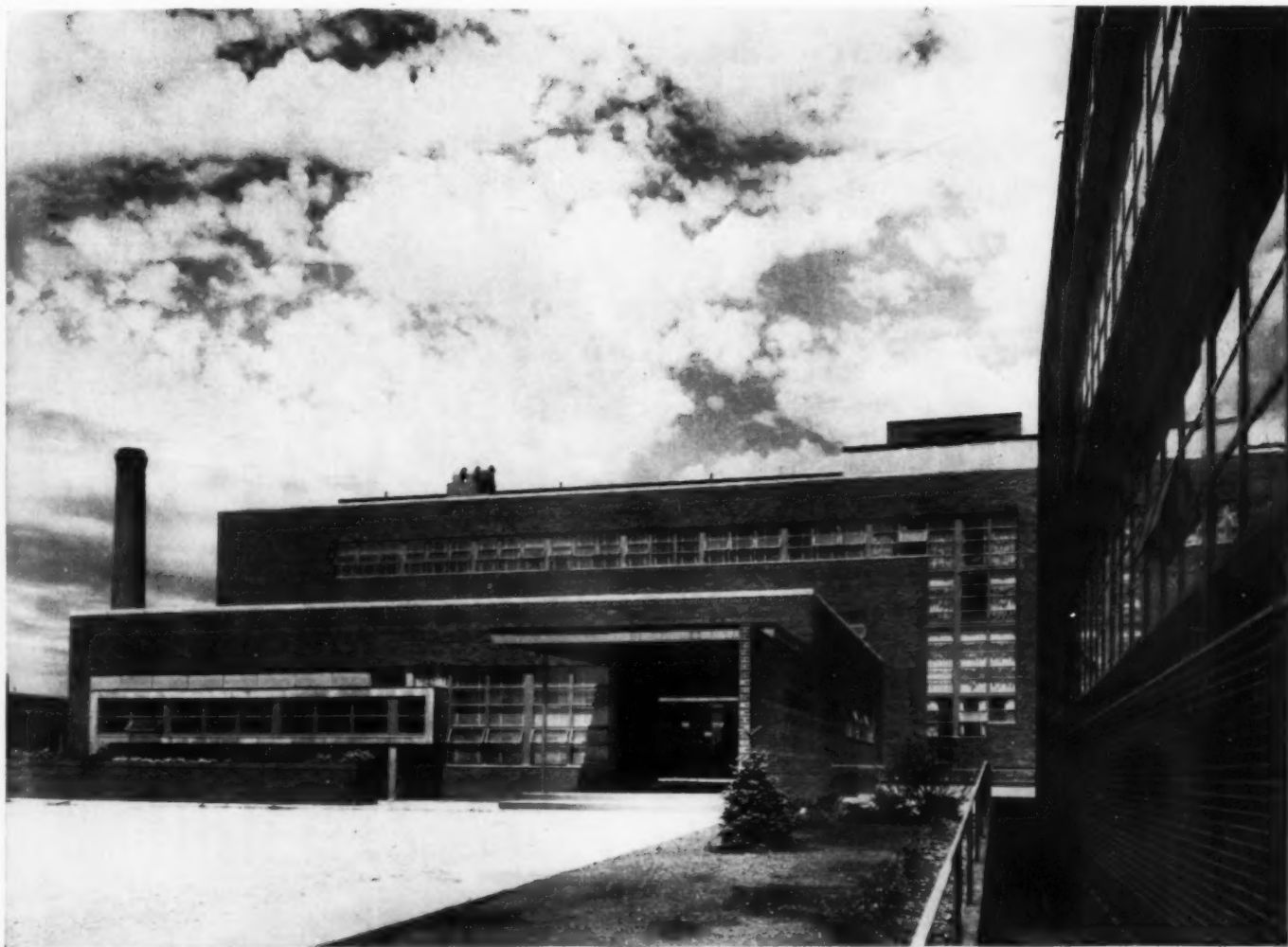


GROUND FLOOR



Ottumwa Hospital develops its first floor quite extensively to provide a nursing unit on this floor as well as the usual combination of lobby, administration, emergency, X-ray department, outpatient facilities and so on. This form establishes a wing (the base of the L on upper floors) to provide an isolated location for obstetrical and surgery departments which will remain undisturbed as future nursing units are added to the building. The scheme makes the first floor awkward in some respects, but very logical





Main entrances located within the form of the L sacrifice a certain monumental quality, but preserve logic of plan. This also, by the way, saved substantially on driveway costs

rooms centrally located on the opposite side of the corridor.

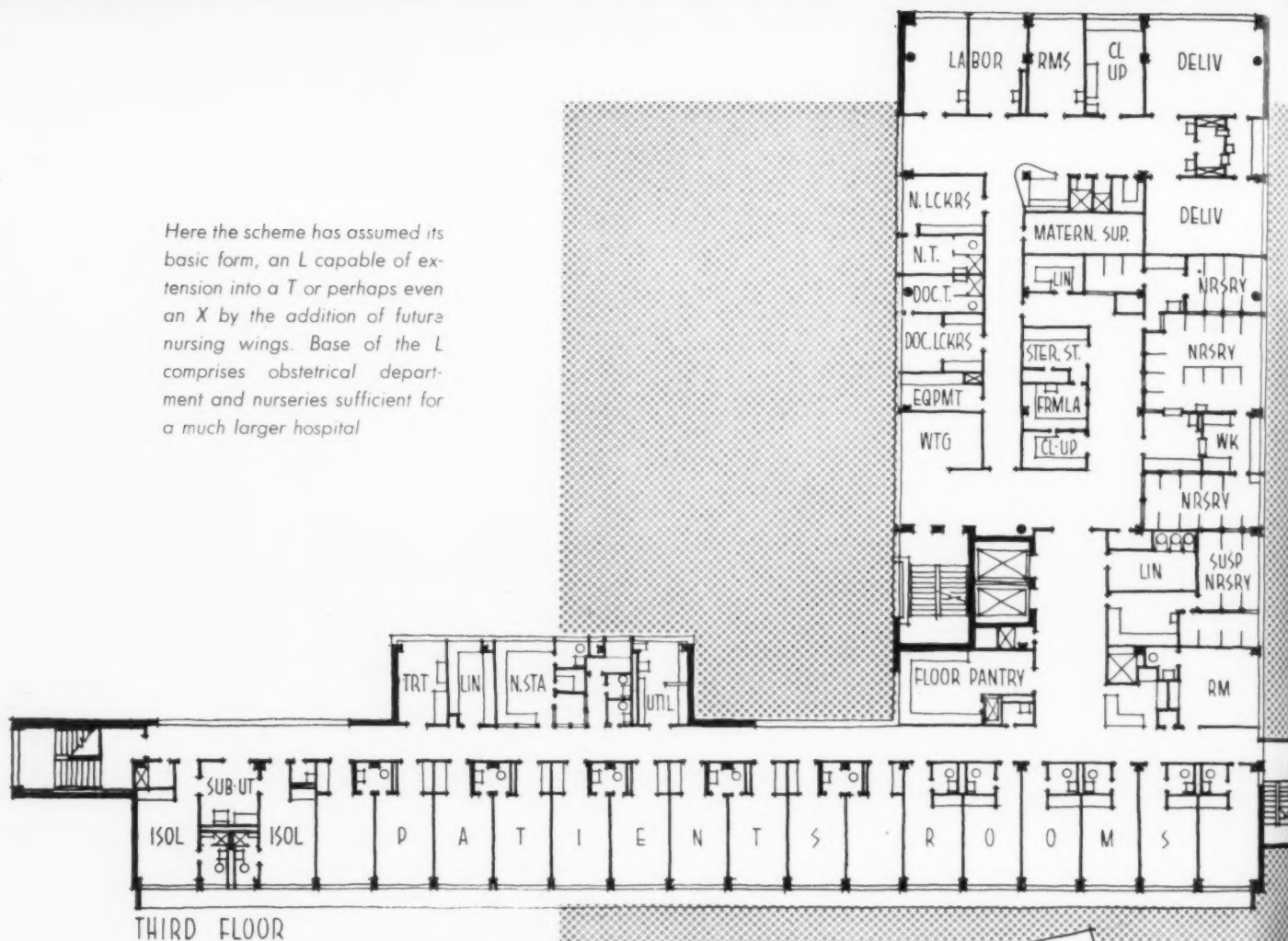
The scheme outlined above, to give an extra large chassis and maintain it undisturbed by expansions, had the effect of straining the lower floors just a bit. Also of putting the kitchen and dining rooms down on the ground floor. However, this level has above-grade windows on two sides to relieve the unpleasantness of basement space. It also introduced a rather awkward problem of handling supplies at ground level, down in an elevator, and through a tunnel to the kitchen and storage areas. This does have the advantage, however, of keeping noisy, unsightly operations well-screened.

The building is of reinforced concrete construction, with concrete spandrels and sun hoods, and thin, high-strength columns. Red brick was used, to contrast with the gray of the concrete.

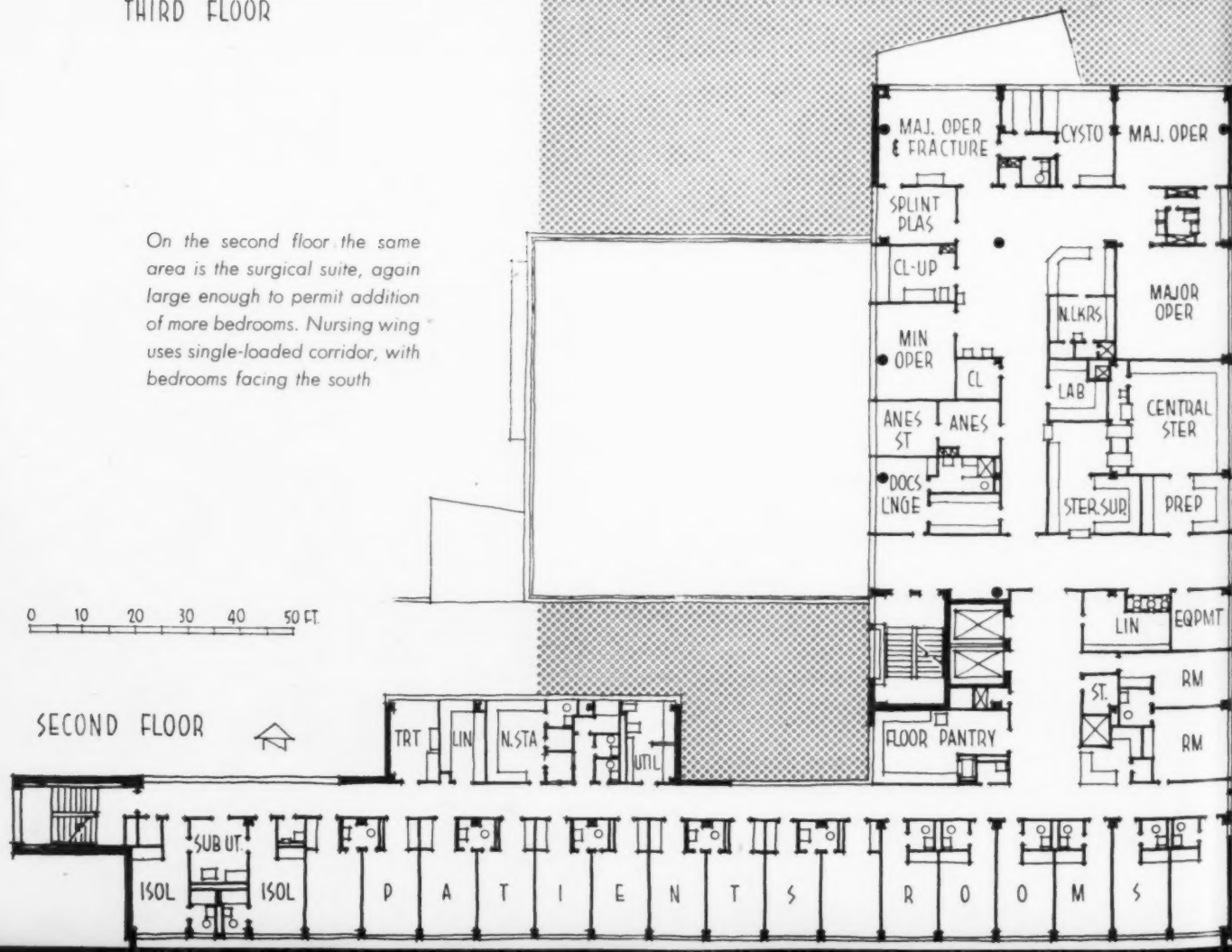
Total construction cost is given at \$1,417,704. This works out to \$12,789 per bed; \$14.88 per sq ft; \$1.21 per cu ft. These costs include construction, equipment and fees.



Here the scheme has assumed its basic form, an L capable of extension into a T or perhaps even an X by the addition of future nursing wings. Base of the L comprises obstetrical department and nurseries sufficient for a much larger hospital



On the second floor the same area is the surgical suite, again large enough to permit addition of more bedrooms. Nursing wing uses single-loaded corridor, with bedrooms facing the south



Top left: main lobby is unusually colorful. Top right: entrance lobby as seen from outside. Center, left: doctors' lounge as seen from entrance vestibule. Center, right: nurses' station on the second floor

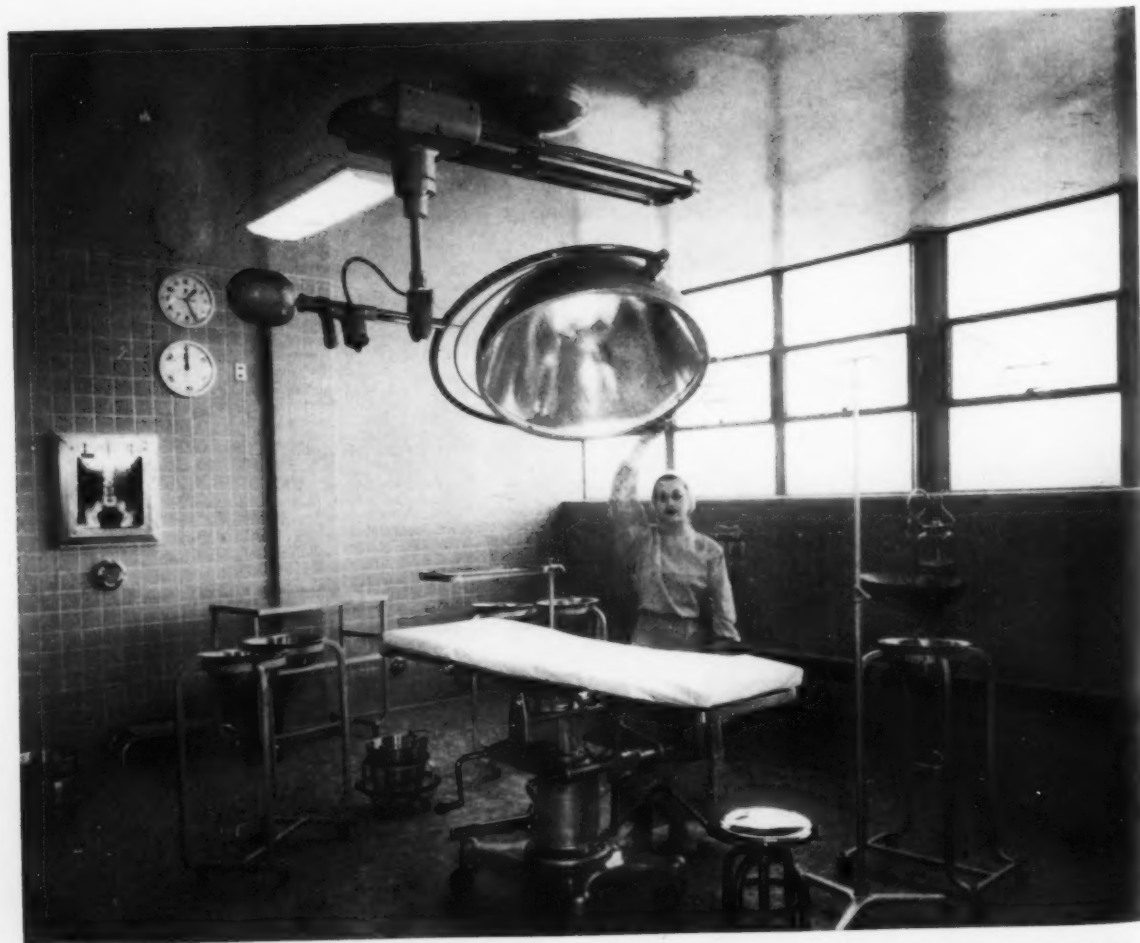
Thigpen



Above: refreshment counter has convenient location near lobby. Right: chapel doubles as lounge or lecture room



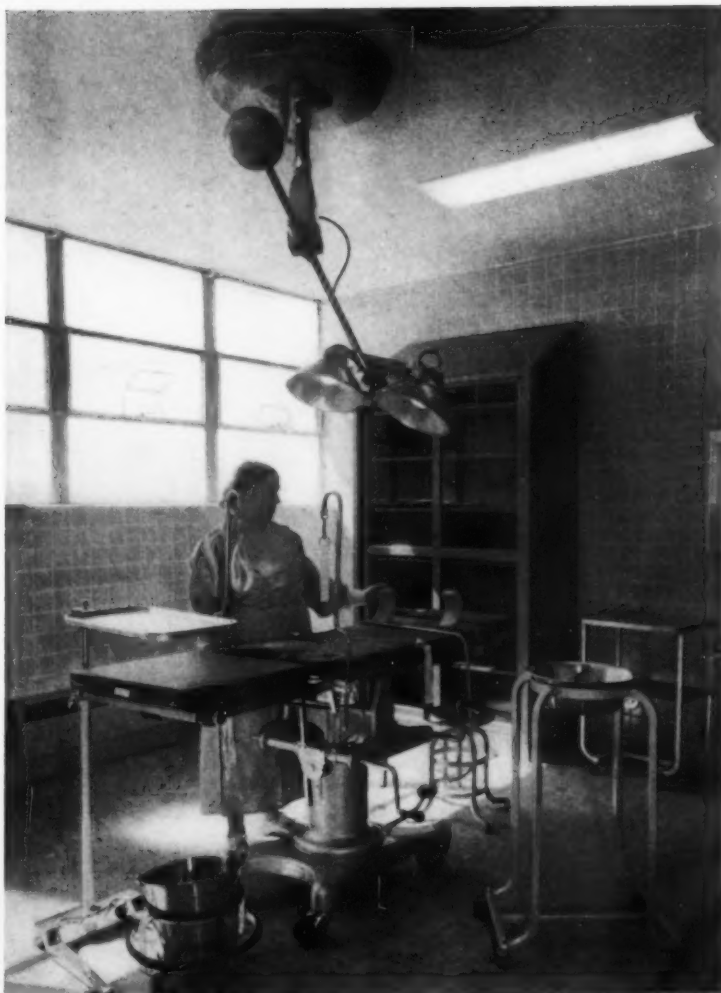
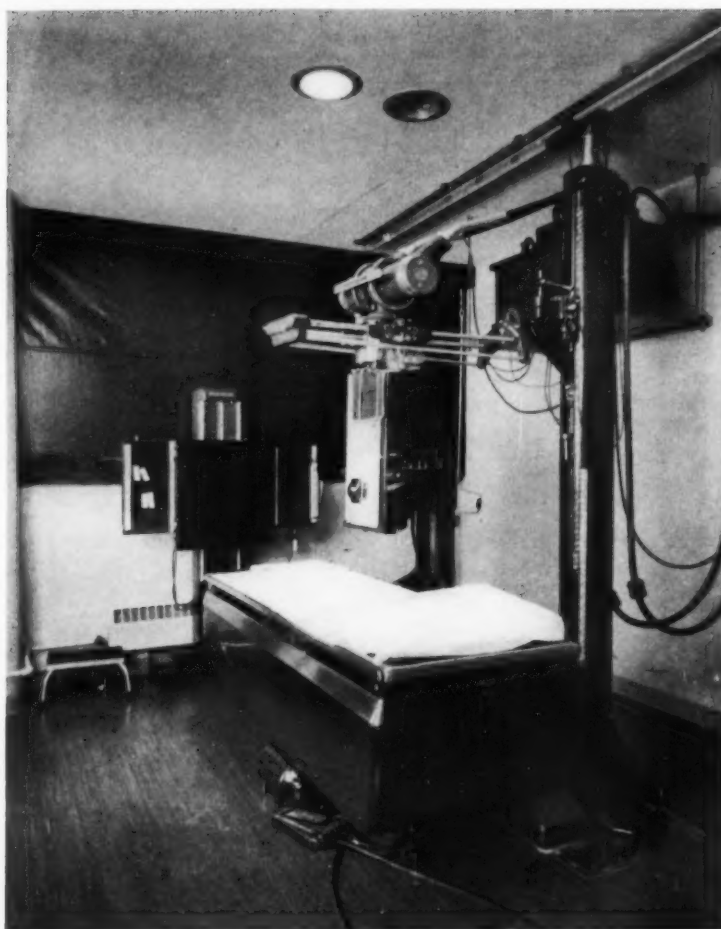
Thigpen



Opposite page, left: view into two-bed room. Interiors use plenty of color, with four color schemes of blue, green, rose beige and peach, with gay draperies. Opposite page, right: one of nurseries.



Opposite page: one of the major operating rooms. This one has windows facing north; the other has no windows. Here the usual fracture room is a full-scale major operating room; the minor operating room, this page, right, is almost the equal of a major room. Other photographs on this page show the scrub-up facilities and one of the diagnostic X-ray rooms (first floor)







*Gadsden County Hospital,
Quincy, Florida*

*Robert and Company Associates,
Architects and Engineers*

PLANNED FOR EXPANDABILITY PLUS ECONOMY

EXPANDABILITY was one of the basic requirements for this hospital, with a little extra strain toward economy. The proposed expansion in this case is not large, from 70 to 100 beds, but the budget did not allow for heavy original outlay for equipment for the larger hospital, so the problem, in effect, was to get a 70-bed building with facilities for a 100-bed hospital, for little extra cost.

Costs for the finished building were given thus: project cost, \$791,131; cost per bed, \$11,465 including group 1

and 2 equipment; cubic foot cost, \$1.55. The land was a gift to the county for the hospital. These costs seem to indicate good overall economy, with a general compactness which shows in a fairly high cubic foot cost. The floor plans shows that this is true; all elements of the building, even including power plant, are kept within the simple form of the building, the corridor is double-loaded, and there are a great many bedrooms without toilet facilities. In general the economy urge did not lead to sacrificing any of the usual facilities in a

Desire for economy dictated simple, inexpensive furnishing and finishes, but materials were chosen also for minimum maintenance expense, since annual operating expenses frequently strain a hospital board even more than original fund raising



Gabriel Benzur

general hospital of high standard, but some economy was achieved by omitting a laundry, also a necropsy room, as it was planned for this type of work to be done elsewhere.

The same considerations also had some effect on the site development, as it was possible to save substantially by careful placing of the building on a fairly rough plot. Nevertheless, the location manages to give most of the bedrooms the desired southwest exposure, for the prevailing breeze and to keep the building away from traffic disturbances.

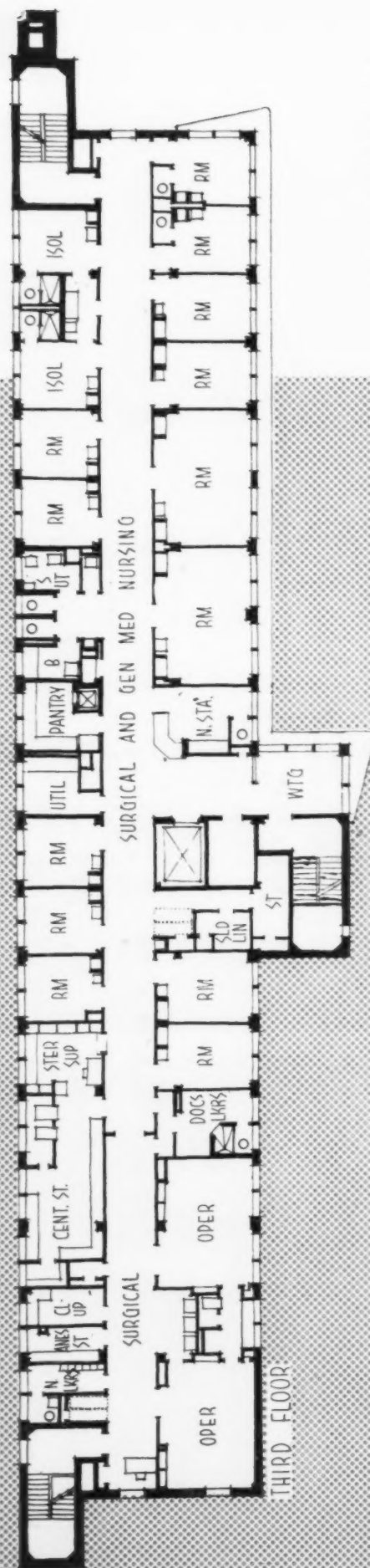
The economy requirement is not surprising, for the new building replaces an old hospital of only 25 beds, with inadequate facilities, especially in the surgical department. Tripling, and later quadrupling, its size gives a rough idea of how communities are tackling their needs for adequate hospital service.



Gabriel Benzur

Above, right: nurses' station, looking toward visitors' room. Below and right: private room, four-bed ward and nursery



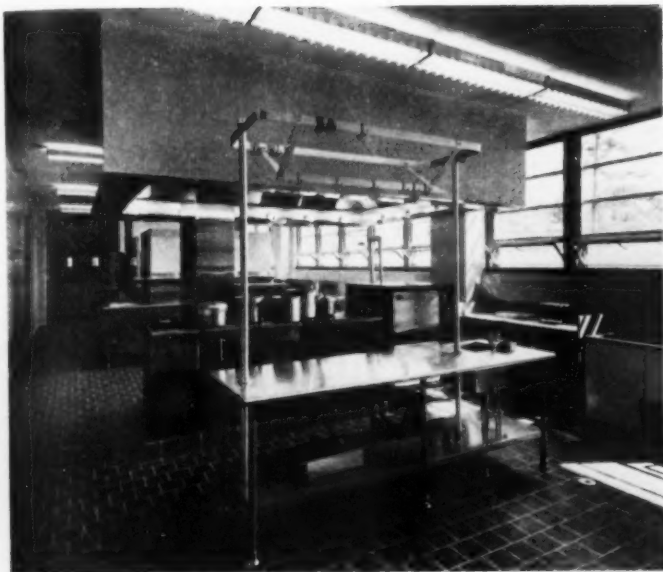


Third floor, central sterilizing and supply is with operating rooms, for close supervision of sterilization. Stair tower beyond suite is awkward, but is really only a fire exit. The second floor is identical, except that obstetrical suite and nursery replace surgical



0 10 20 30 40 50 FT

NORTH



Gabriel Benzur

Above: kitchen is long and narrow, and, with first floor location, quite pleasant. Kitchen is large enough to serve 100-bed hospital, though there are now only 70 beds



Above: nurses' work room in connection with nursery (see second floor plan). Right: emergency operating room, first floor, has light-tight shades, strong artificial light



Below, left: central sterilizing room leads past the sterilizers, into sterile supply room; this suite is located with operating rooms. Below, right: scrub-up alcove between the two operating rooms, third floor



Above, right: while there is only one full-size delivery room, labor room can also be used for delivery



Above: central sterilizing department, as seen from sterile supply room. Below: major operating room

Gabriel Benzur





53-BED HOSPITAL THAT WILL GROW TO 75

St. Charles Hospital, Bend, Oregon
John W. Maloney, Architect

W. H. Witt Co., Structural Engineers
Lezin & Notkin, Mechanical and Electrical Engineers

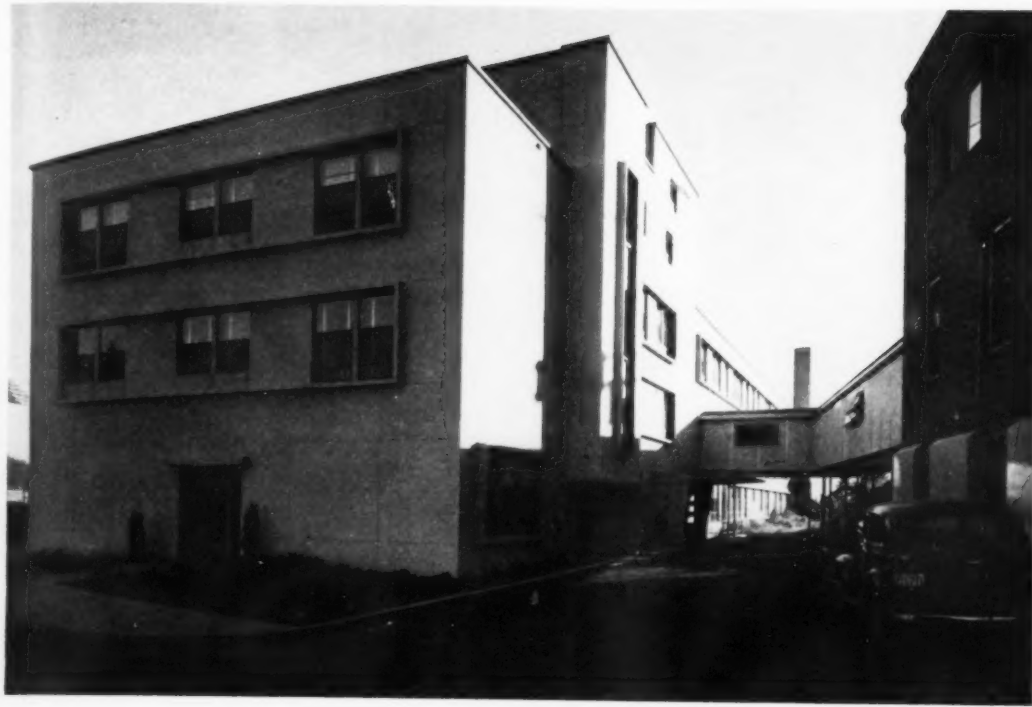


THIS 53-BED HOSPITAL is really a 75-bed scheme with one nursing floor omitted for the present. It connects now to an older building later to be removed; patients classified as medical are housed in the old building until a fourth floor can be added to the new hospital. The new building is complete — missing only laundry and morgue — and does not depend on the old building for any services; rather the patients in the existing building are served from the new.

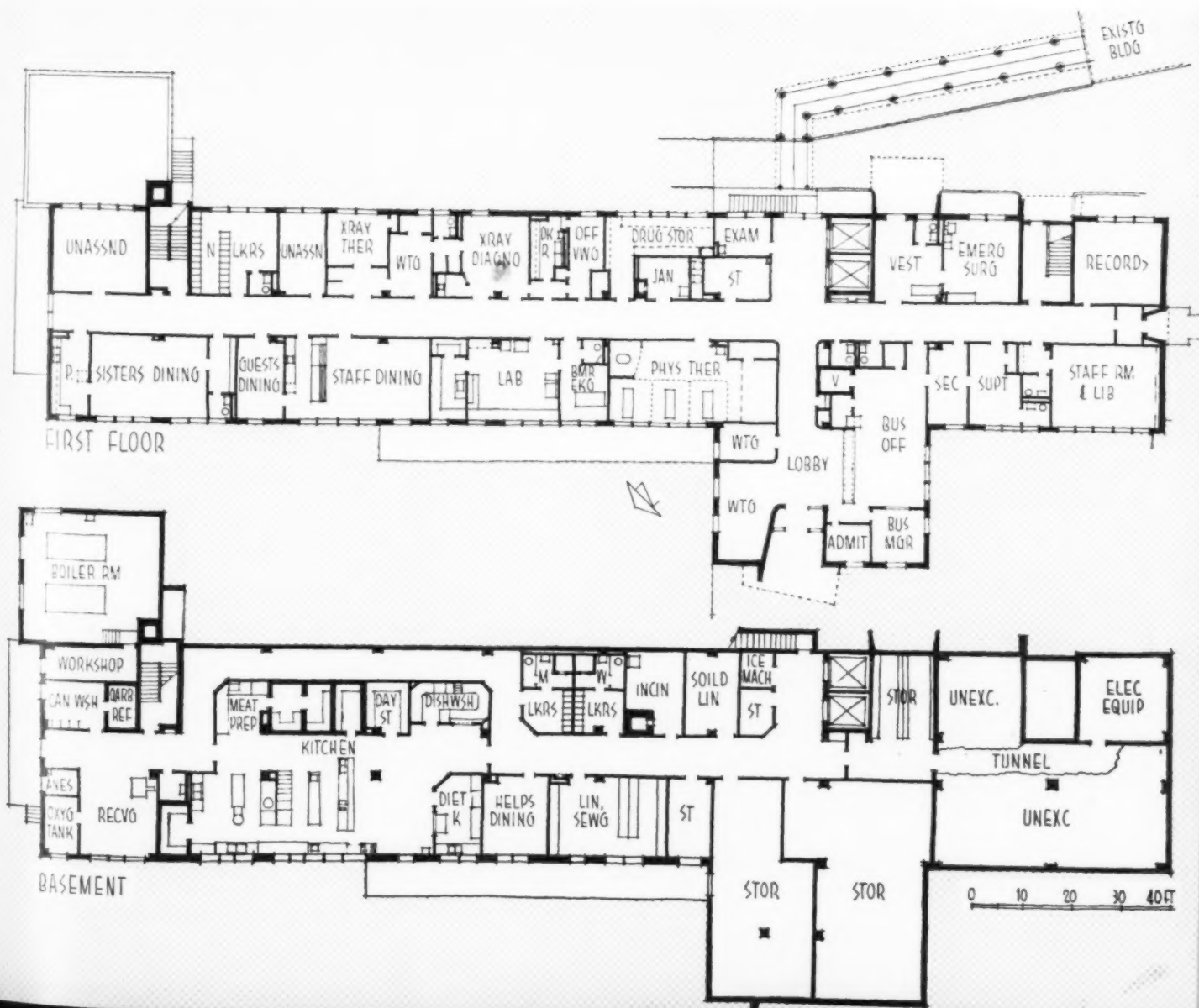
The site being quite hilly, advantage of the grade was taken to give the kitchen end of the basement full window height, and to locate receiving dock at this level.

On the first floor, the little extension at the entrance provides extra space needed for lobby and offices, and gives exceptionally good control of visitors and incoming and outgoing patients. Separate emergency entrance and surgery are near elevators, but screened from view.

On the second floor, the surgical suite is conventional, with the possible exception that the fracture room also serves as one of the major operating rooms. Central sterilizing is convenient to the surgical department, also to the covered passage connecting to the old hospital. The location of the nurses' station, near the elevators but not central in the nursing unit itself, was the subject of some discussion; it was finally decided



B. J. Allen

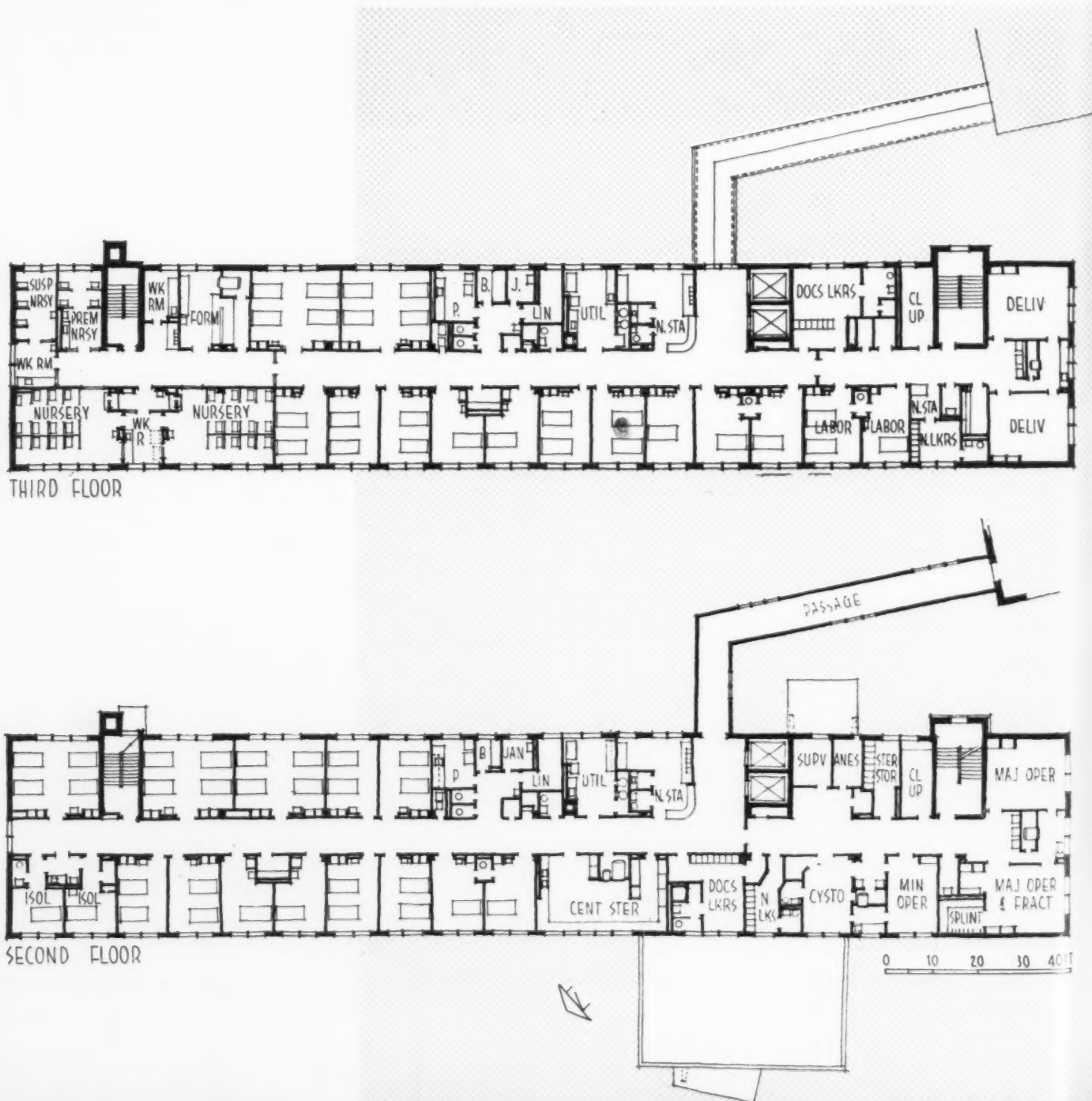




that control was more important here than convenience.

The third floor is similarly planned, except of course that this is the obstetrical and maternity floor. The nurseries follow the now-familiar plan of having the only entrance through the examination and work rooms, so that nobody need enter the nurseries except the nurses themselves.

Total construction costs were \$804,781. These work out to \$17.25 per sq ft; \$1.54 per cu ft; \$15,184 per bed.

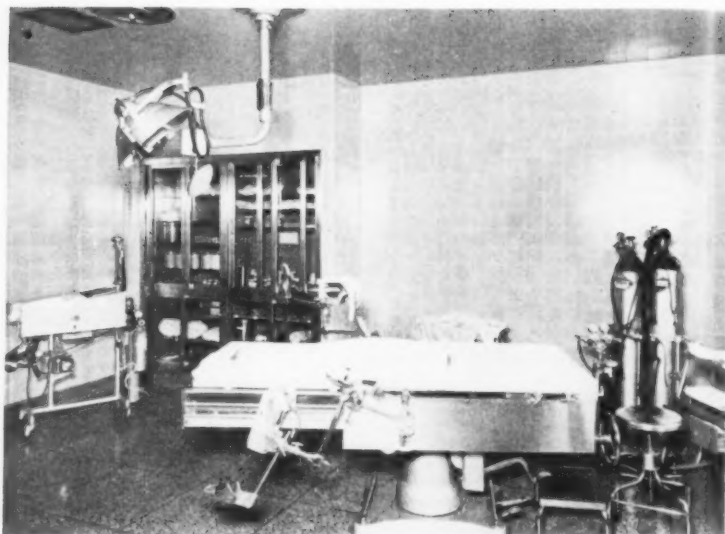




Left: typical private bedroom; Above: one of the nurseries, using the cubical system of protection. Below, left: kitchen on ground floor serves food to dining rooms above and to patient rooms through heated carts. Below, right: view of the central sterilizing department

B. J. Allen





Above, left: scrub-up alcove between delivery rooms at St. Charles Hospital. Above, right: one of the two delivery rooms (third floor). Below: one of the major operating rooms; the other, though for fracture work, is fully equipped for any surgery



19-BED HOSPITAL OF REMARKABLY LOW COST

Cozad Community Hospital, Cozad, Nebraska

Frank N. McNett & Company, Architects

THIS HOSPITAL is an interesting example of the problems of designing the very small hospital. It was once said that nothing under 50 beds could really be called a "hospital," as it could not be fully equipped and staffed for real hospital service and care. Yet here is one of but 19 beds (two more bedrooms have been added since this plan was drawn) with full-size operating room, separate delivery room, sterilizing, X-ray, laboratory, emergency room. The architect's problem was to meet the Federal insistence on standards of equipment and facilities, and yet to stay within a tiny budget.

This he has done by keeping the plan very compact, by keeping cubages down to minimums, by tucking things into corners. And yet most bedrooms have at least connecting toilets. Also the organization of hos-

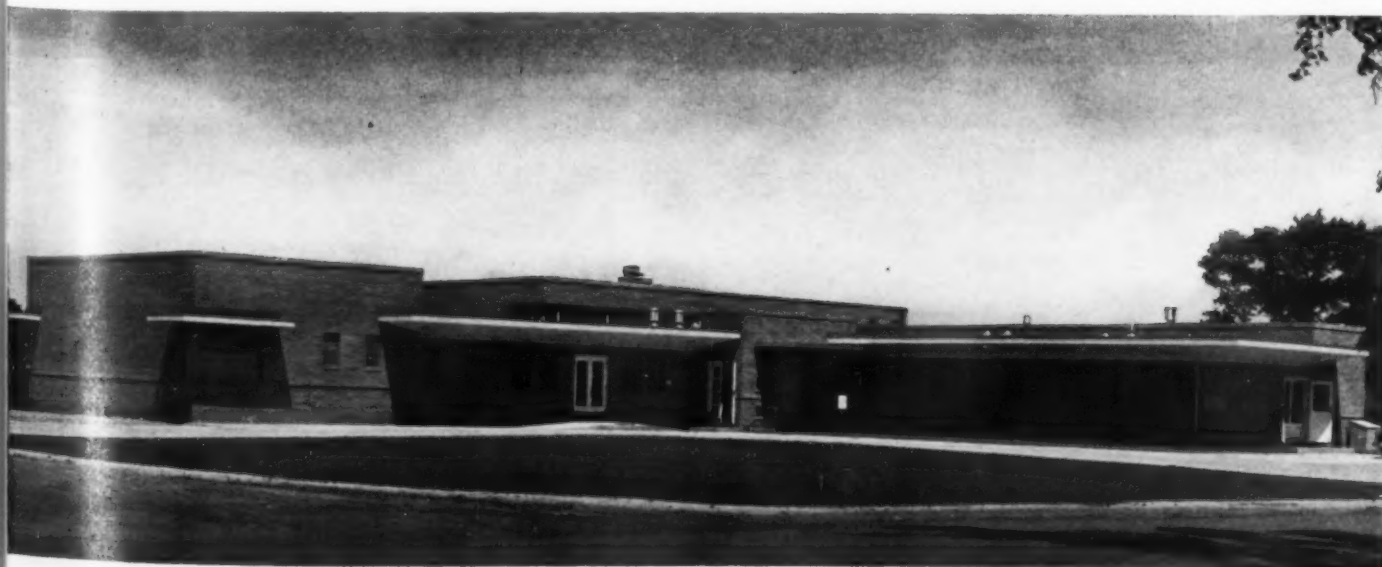
pital departments has been maintained, and separations are generally clear, although in one or two places the space must do double duty.

The hospital was built for the remarkably low cost of \$144,585, not including equipment. Usable area totals 9262, cubic content 168,492.

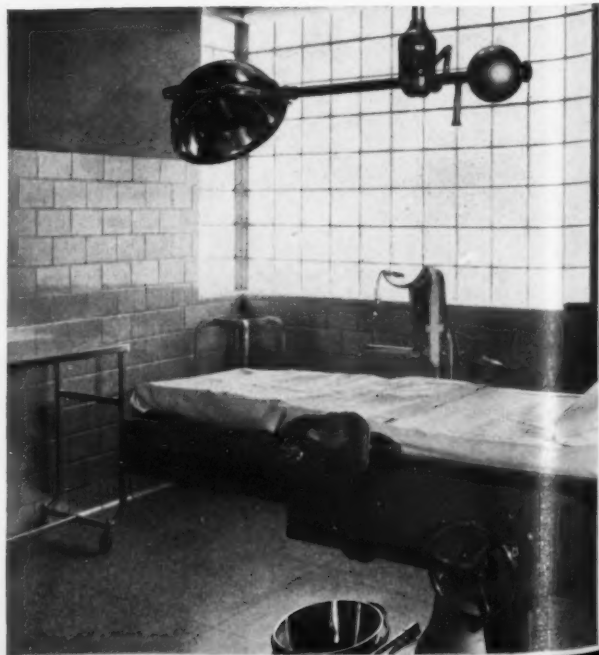
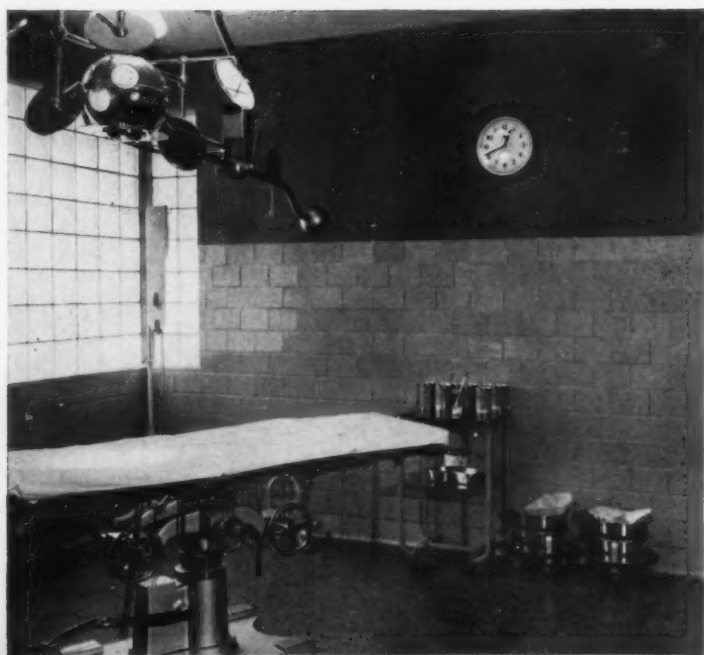
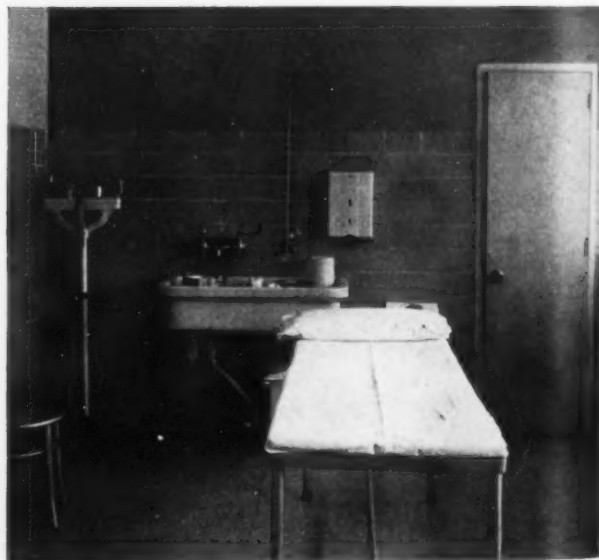


A minimum hospital on a minimum budget, this one still gives full hospital care, not forgetting out-patient clinic

Vieregg Studio

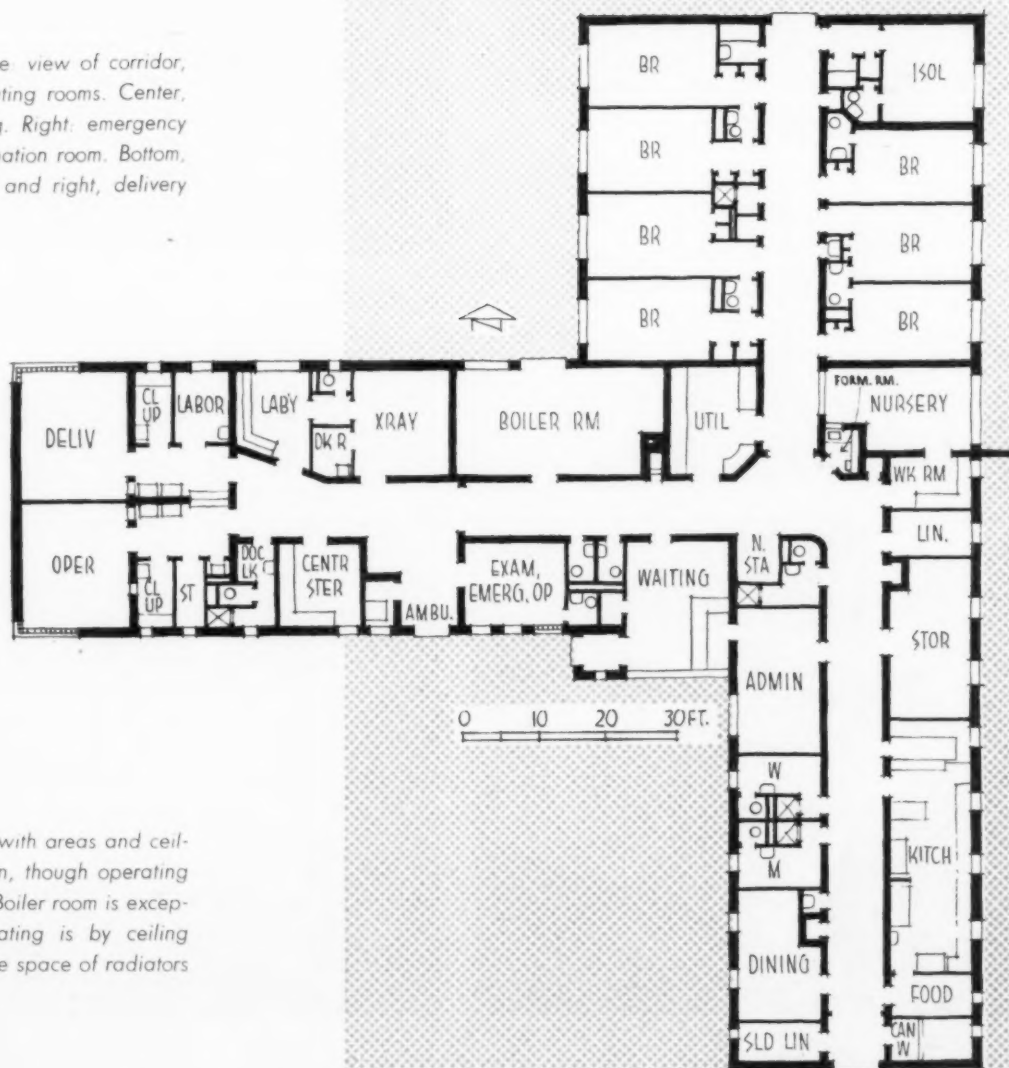


Vieregg Studio





Opposite page, above: view of corridor, looking toward operating rooms. Center, left: central sterilizing. Right: emergency operating and examination room. Bottom, left, operating room; and right, delivery

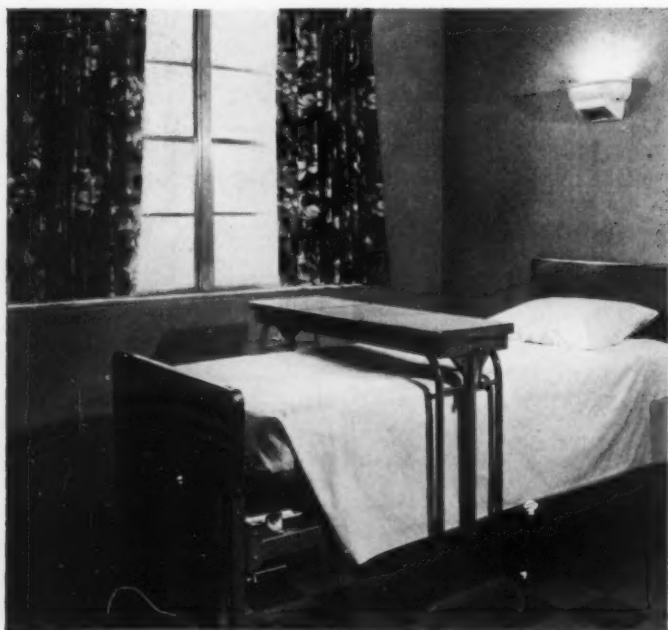


Plan is very compact, with areas and ceiling heights kept down, though operating rooms are full sized. Boiler room is exceptionally compact; heating is by ceiling radiant system, to save space of radiators

Right: utility room of Cozad Hospital is one of the areas not kept to minimum. Below: corridor is kept to narrowest possible, but manages tile for full wainscot



Below: bedrooms are minimal in area, and ceiling heights are low. Ceiling radiant heat saves space of radiators



Vieregg Studio



Shoppers' World at Framingham, Mass., an outstanding example of regional shopping centers, seen at peak parking demand. Additional land in reserve could more than double present parking. Architects: Ketchum, Giná & Sharp

TRAFFIC PROBLEMS IN SHOPPING CENTERS

PART 1 PARKING

*How it affects traffic engineering, the site plan and store design **

By Kenneth C. Welch, A.I.A., and Bruno Funaro, A.I.A.

IN A SHOPPING CENTER which depends mostly on customers coming by automobile, the design of the parking area — which may have to be so large as to cover more than 80 per cent of the site — is not only a matter of traffic engineering, but is closely integrated with the site plan and the design of the stores proper. This article will be mostly concerned with the latter aspects of parking design.

How Much Parking?

Question number one in the mind of the developer of a new shopping center is "How large should the parking area be?" An answer to this question, even in the nature of an approximate estimate, is essential before any center can be planned.

Insufficient parking will prevent a

shopping center from reaching the maximum productivity. The merchant who wishes to produce his maximum possible December sales (at which time he makes an important proportion of his annual profit) must be able to take care of all the customers who come at that time.

Evidently, when land is abundant and cheap, it is safer to provide parking in excess of the demand rather than to risk curbing the productivity of the stores because of parking deficiency. The question "how much parking" can, in effect, be divided into three different questions:

1. How much parking will be required at the weekly peaks (which generally occur on Saturday mornings or on those nights on which the stores stay open late)?
2. How much parking will be required at the peak of the Christmas shopping and of special events?
3. How much parking in excess of the current needs should be provided

to meet future increases in parking demand which may be due to increased productivity of the stores, changes in shopping habits, and expansion of the stores?

The reason for three separate questions lies in the fact that we are actually dealing with three physically distinct areas. The parking area which is normally used every week requires paving, lighting and landscaping in quite a different manner than the area reserved for overflow parking which is used only on few occasions during the whole year. The land earmarked for future expansion could be kept unimproved until the demand for it seems imminent.

Realistic answers to these questions can be obtained only from the observation of the actual performance of shopping centers which have been in operation for a number of years. The new large regional centers will undoubtedly provide useful data. So far, whatever data are available from them are incomplete and often misleading because these centers have been open for too

*This article appears concurrently in *Architectural Record* and *Traffic Quarterly* with the permission of The Eno Foundation, Saugatuck, Conn., publishers of the *Traffic Quarterly*. Privately endowed and affiliated with Yale University, The Eno Foundation is devoted to study and research for highway traffic and parking improvement and also is a publisher of monographs on traffic engineering.

short a period and have not yet reached their full productivity. However, some statements of a general nature can be made safely.

The parking demand, with its weekly and seasonal fluctuations, has been found to follow a very similar pattern in centers similar in size and types of stores. Differences in parking demand can be traced back to foreseeable causes (like extent of public transportation, prevailing types of stores, size of the center).

For a good-sized suburban regional center (of about 500,000 sq ft gross store area), depending almost entirely on shoppers coming by private car, with at least one, perhaps more, department stores, the maximum demand during a typical week will probably have a parking index of 5 (see table this page); during seasonal peaks it can rise to 10 or more. An index of 15 should be pro-

plan. It is evident that the more the parking area is increased, the further it stretches away from the stores, until it will reach a distance, beyond which, its value as parking becomes nil. How far the parking field can extend away from the buildings and still be useful will depend on a variety of circumstances, including the eagerness of the shopper, the state of the weather, and what is offered by other centers within the region.

For design purposes, let us assume 400 ft as the maximum parking distance from the outer fringe of the parking area to the stores, for regular (every-day) parking, and 650 ft (3 minutes walk) as the maximum distance for the overflow parking—a distance which may have to be walked only on very rare occasions. Then as an example, let us take the shopping center mentioned before and translate it into a diagram-

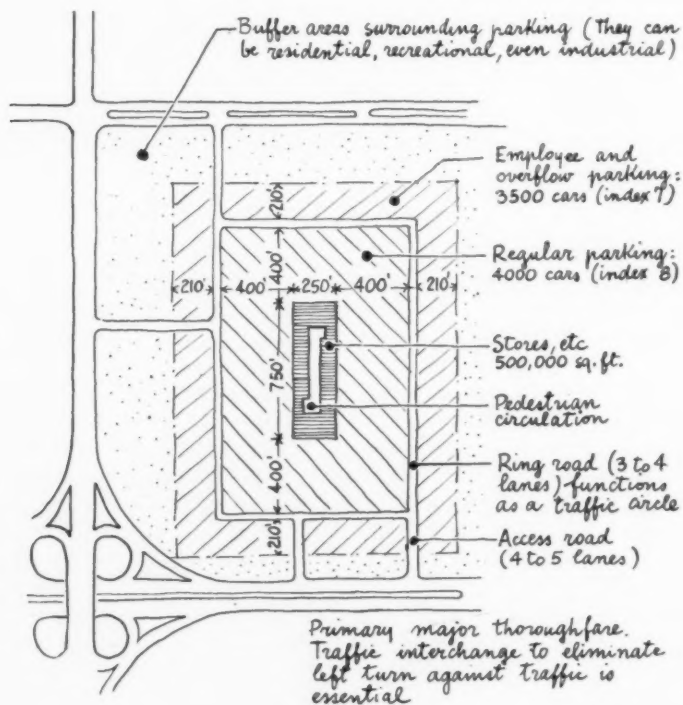
into a multi-level design. The parking belt has an area of 1,440,000 sq ft and holds approximately 4000 cars (counting 360 ft of gross area per space). The parking index is, therefore, 8.

Since this type of site plan—with the parking area all around the stores—provides the largest amount of parking within an established distance from the buildings, the index of 8 seems to be about the top that can be reached for a shopping center of this size, if the assumed 400 ft maximum distance is to be maintained. If the parking area can be extended on all four sides, it would take an additional belt 210 ft deep to provide the additional spaces needed to reach the index of 15.

This example shows that often the geometry of the site may be the determining factor of the relation between parking, access roads and buildings. If, however, the parking index which should be reached in order to achieve maximum store productivity, calls for a more extensive parking area than can be reasonably placed within the site, it will be necessary either to build multi-story parking structures or to resort to a shuttle-bus service, both of which add to operating expense.

Circulation in the Parking Area

The shopper should be able to find her (or his) way around easily without any previous study of the site. The



Theoretical plan for a regional shopping center shows how the geometry of the site can be a limiting factor in the development of the parking area

vided for a properly balanced center—which sells 85 per cent shopping goods and which depends over 95 per cent on automobile transportation—when this has reached a 90 per cent of top productivity.

Geometrics of the Site Plan

Excessive emphasis on the extent of parking may become meaningless unless the parking can be fitted into the site

matic plan, with the stores grouped around a landscaped mall. The average number of floors for the stores is three (including partial basements and upper stories). The gross store area is 500,000 sq ft.

All around the store buildings there will be a parking belt 400 ft deep. This is the maximum amount of regular parking that can be placed around that store group if we do not want to go

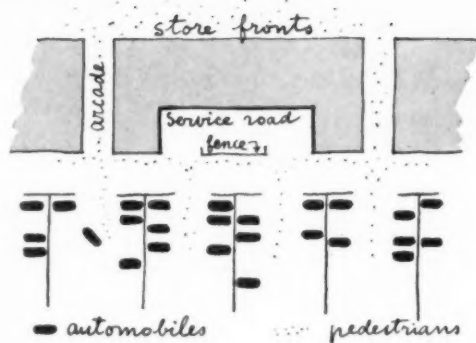
PARKING INDEX

The most generally accepted parking index for a shopping center is expressed by the number of car spaces per 1000 sq ft of gross operating floor area of the stores (this includes the floor area of basements, mezzanines and upper stores, but excludes the service area outside of the stores like boiler rooms and freight tunnels). For example, a center with 200,000 sq ft of gross store area and with 1500 parking spaces has a parking index of 7.5

$$\left(\frac{1500}{200} = 7.5 \right).$$

most satisfactory pattern consists of parallel parking bins perpendicular to the stores with a major feeder road or ring road at the end of the bins away from the stores.

This road should provide continuous circulation on the site—i.e. to act as a traffic circle. Access to the stores by vehicles should be limited to circulation to arcade and key store entrances, parcel pick-up stations, etc., for the pur-



pose of picking up passengers. Other circulation adjacent to stores should be discouraged in plan. In this way minimum interference between vehicles and pedestrians is assured. A two-way circulation to the bins is desirable.

Demounted shoppers can walk easily along the bins from cars to stores. When the bins are not longer than 400 ft, there will be surprisingly very little traffic in each one of them even when the parking area is in full of activity. Raised walks between cars are generally undesirable. The shoppers would rather walk on the wide pavement of the bins than on a narrow walk between car fenders. In the north, raised walks are also an obstacle to snow removal. Instead of using walks it would be better to add this space to the width of the bins.

After having walked along the bin, the shoppers cross the road running along the side of the stores (curb parking should be avoided) and are ready to enter the stores—that is, if the entrances of the stores are there. A simple pattern of stores with their fronts facing the parking area (front parking) is undoubtedly the best for directness of access to the stores, but is obviously only suitable for the neighborhood center made up of convenience goods stores.

Shopping goods stores demand maximum ease of pedestrian access between stores. This is the feature that has always made them successful in the downtown district—the only shopping goods center heretofore.

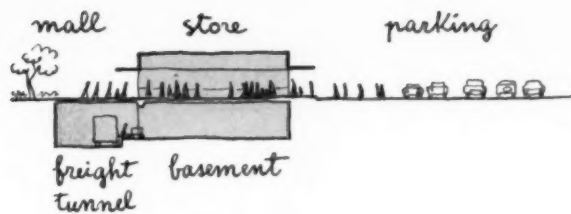
There are, basically, two ways to solve this problem: the first is to lead the shoppers to arcades which pierce through the store building. These arcades have to be frequent enough so that the customers are not forced into an extended walk along the service yards of the stores—shielded as they may be by planting or fences and livened with directional signs and advertisements.

The arcades on the other hand,

should not be too frequent because, while they provide access to smaller, shallower shops and services, they do constitute a structure which is not productive as such, and hence affect the economic picture. If they are too far apart, they obviously increase walking distances from parked car to store.

The second way is to provide a servicing passage underground or below the parking level leading to the great majority of stores at basement level. It is more costly but under certain conditions justified.

Care must be used, in the type of shopping center shown and described here, not to detract too much from a



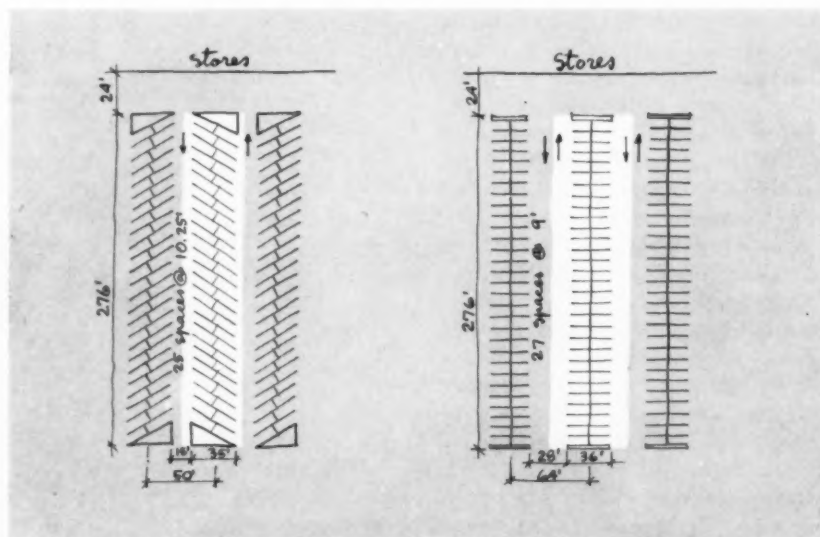
When store fronts are on the opposite side of the parking area (left), shoppers walking from cars to stores must take a circuitous route. A freight tunnel at the basement level (above) would make store fronts possible on both sides, but the cost might be difficult to justify

What Angle Parking?

The accompanying diagrams illustrate why the authors are generally in favor of the 90 degree pattern—because this combines economy of space with extra wide bins suitable for two-way circulation, elimination of expensive curbs, improved sight lines and hence, greater safety.

Parking Analyses for Better Forecasts

Now that a few large planned shopping centers are already in operation—and many more are expected to follow—there is going to be the opportunity to check with actual parking surveys many



Although 90 degree parking with two-way traffic takes slightly more space per car than 60 degree parking with one-way traffic (295 sq ft as compared with 276 sq ft), 90 degree parking is preferable. Cars can move in both directions, and sight lines are improved

concentration of common pedestrian traffic on the interior common area, nor to complicate the operation of some types of stores wherein a two-front entrance can be detrimental. This system, with a greater number of stores which can use two fronts, makes it possible to reduce the number of entrance arcades.

of the theoretical assumptions of the past. It is hoped that some form of standard procedure for parking analyses may be generally adopted so that traffic data collected in independent surveys may be easily compared and different trends may be evaluated. As an example of how this particular type of survey can

be handled, we outline the principal subjects which have been investigated in the course of traffic surveys for shopping centers made by Larry Smith & Co., real estate consultants and Victor Gruen, architect.

1. *Traffic Count at Entrances.* The number of cars entering and leaving each entrance is plotted for every half-hour period during a whole week. Since the activity of a shopping center has a weekly cycle, any complete investigation has to cover the span of a week. Comparison of data collected during different weeks throughout the year will in turn reveal the character of the seasonal fluctuations. It is possible, also, but taking the count at what might be considered an average time, to estimate through a comparison of daily sales the amount of parking space which would be required at the peaks.

2. *Parking Accumulation.* From the traffic count at the gates, it is possible to determine the number of cars which are within the parking area during each half-hour period. These figures reveal the pattern of fluctuation of the parking demand during the week and may assist in forecasting when auxiliary parking or other special measures may have to be provided.

3. *Parking Lot Turnover.* This is obtained by dividing the number of cars which have entered the parking area during the whole day by the maximum number of stalls used during that day.

Turnover and accumulation are an index of the shopping habits of the region. In a shopping center which has both convenience and shopping goods, there may be periods of greater turnover due to intensive short-time convenience shopping, and periods of great accumulation but less turnover when shopping is mostly for shopping goods.

4. *Duration of Parking.* Separate counts are taken in different areas of the parking lot to determine the relationship between duration of parking and the character of the adjacent stores. At certain seasons it is possible to make an aerial photographic record of the use of the parking area which can be tied in with the traffic count.

5. *Automobile Occupancy* (in men, women and children). This will give a better knowledge of the shopping habits of the region. The number of persons per car is definitely greater in a suburban center, appealing to the whole family; on open nights the occupancy will certainly exceed two.

PART 2 THE PARCEL PICK-UP SERVICE

Prepared by Kenneth C. Welch,
Bruno Funaro and the editors of
ARCHITECTURAL RECORD

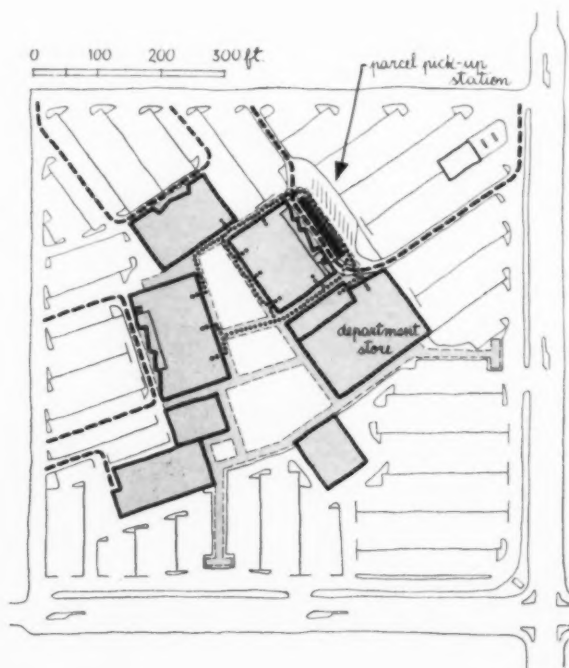
Packages are transported to customers' cars by a number of systems ranging from pushcarts to long, underground conveyors

IN SHOPPING CENTERS some system is desirable which will encourage the customer to take parcels home in his own car, even with items as large as card tables or small chairs. A system which transports parcels from the store to the customer's car makes shopping easier and can cut down the store's overhead.

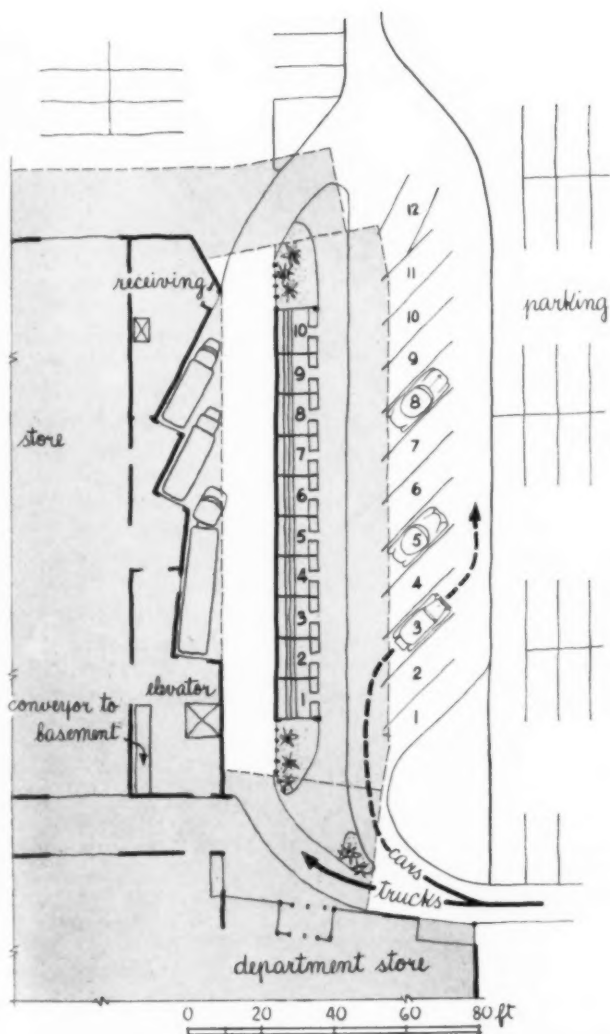
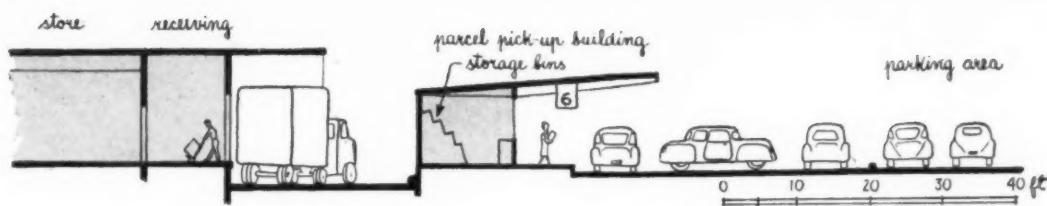
If the shopping center is to reach its maximum sales potential, the customer must want to shop even during the busiest times. He will be more inclined to do so when he can park wherever there is an available spot, shop where he pleases, have his purchases deposited at a parcel pick-up station, and then drive to the pick-up station to get them.

One way this can be done is illustrated here in the drawings for a proposed shopping center in Toledo, Ohio (also AR, Mar. 1951), designed for maximum ease of pedestrian contact between stores.

Parcel pick-up systems are a fairly new idea, and so are not very numerous. They have been used more in supermarkets than for stores dealing in apparel, home furnishings and durable goods. Packages from supermarkets are large in number and are always taken home, so a parcel pick-up arrangement can effect quite a savings in personnel who ordinarily would take the groceries out to cars. Examples are shown on page 228.



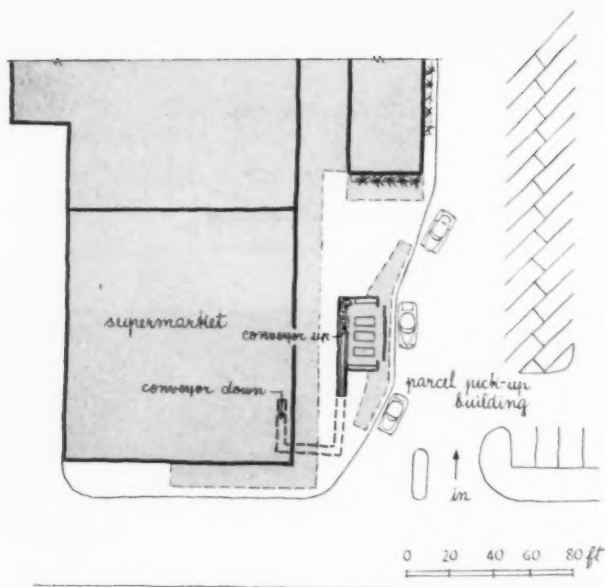
The parcel pick-up station for a proposed Toledo shopping center is next to the department store. Clerks' or customers' travel for taking packages to the pick-up station is indicated by dots; truck travel by dashes. The three buildings in the lower half are, left to right, a supermarket, drug store and restaurant. The remaining stores sell convenience and shopping goods and are only a short distance from the pick-up station. Details of the parcel pick-up station are across page



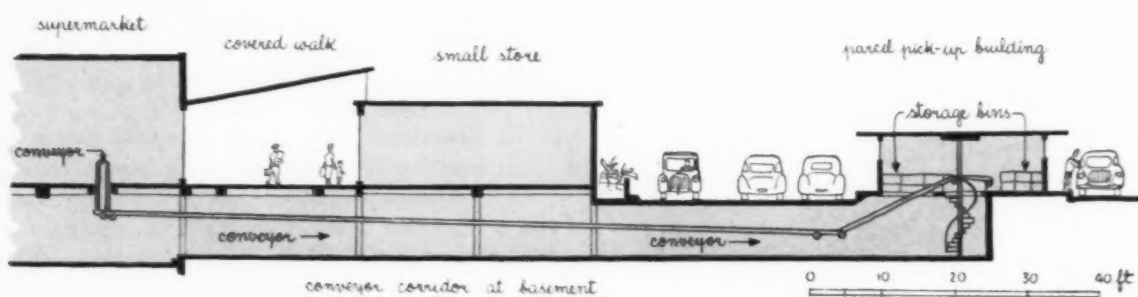
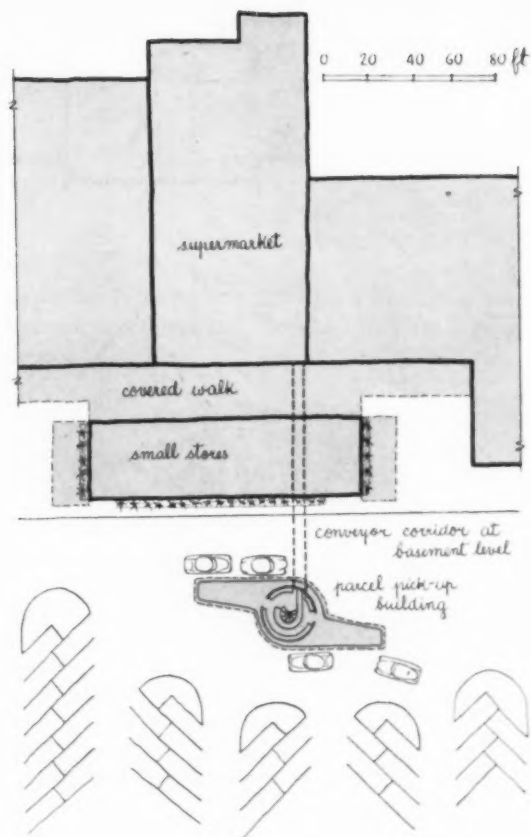
At Wieboldts in Evanston, Ill., the customer leaves her purchase at a Customer Package Desk. Then the package is taken by pushcart across the street to a pick-up station on one of the two levels of the parking garage. The customer has a check with a key number and a plastic card with the last three digits of the check number on it. The customer sticks the plastic card under his windshield wiper and the attendants get the packages ready as she approaches

Above: How the pick-up station works. The customer takes, or the store sends, the packages to the parcel pick-up building. Each package has attached to it a detached portion of the customers claim check. The claim check would be numbered and perhaps colored. Packages would be left at the bin having the number that appears as the last digit on the claim check, and the sign at the bin would be the same color as the claim check. Cars can drive in and out without interference with other cars. Shaded area is covered. Kenneth C. Welch, Architect





Parcel pick-up station for the Kroger Co. (above) has an underground conveyor, "U" shaped because of the proximity of the pick-up station to the store. The Jewel Food Store (right and below) has a straight conveyor. Both stores are at the Evergreen Park Shopping Plaza in Chicago. Howard T. Fisher and Associates, Inc., Architects & Engineers, Holabird & Root & Burgee, Architect-Engineer



Conveyor system at Jewel Food Store in Park Forest, Ill.



Boys Market, Los Angeles, has bins for leaving carts

A NEW APPROACH TO SAFETY OF BUILDINGS

By Paul Weidlinger *

The author discusses the potentialities of statistical methods for estimating the safety of a structure. He points out that the real measure is not the factor of safety, but the probability of failure

From the Code of Hammurabi
(Circa 1250 B.C.)

"... If a builder build a house for a man and do not make its construction firm, and the house which he has built collapse and cause the death of the owner of the house, that builder shall be put to death . . ."

THE REAL TEST of the underlying assumptions of a structural design is not in the performance under the design load, but in the failure of the structure. A building may be designed under wrong premises, with mistaken methods, and nevertheless may (and very often does), due to fortuitous circumstances, perform adequately for many years, and for many reasons.

The only completely reliable way to test any one structure would be to destroy it and thereby determine its load-carrying capacity over and above the design load. Since this, admittedly, is not a practical means of assuring the safety of our buildings, structural analysis is employed in engineering design. But all not fully empirical methods require two decisions:

1. The choice of a suitable hypothesis as to the behavior of the structure.
2. A rational judgment or a measure of the expected deviations of the real structure from its idealized counterpart on which the analysis is performed.

Both of these points necessarily lead to fundamental considerations. Thus, hypotheses are constantly revised in light of new experiences and sharper or more exact methods of experiments.

Unfortunately these revisions usually involve more complex and cumbersome methods, and the justification of their use in engineering to obtain added precision is thus debatable.

Also, the question of reliability of classical theories reproducing the behavior of the real structure inevitably enters into any judgment of the safety of the structure itself, which leads to the second of the above points. The fact that our assumptions as to the behavior of materials, structures and occurrence of service loads are less than

well-founded is apparent in the use of factors of safety in practically all engineering designs. Any attempt to measure or even estimate such uncertainties involves, consciously or otherwise, some applications of the theory of probability.

The results obtained through it in many fields (insurance, for example) have made it probably one of our most efficient tools of scientific analysis.

In view of this, any discussion of safety factors would be incomplete, or even meaningless, without considering the theory of probability which, in spite of philosophical connotations, is an understandable and quite practical subject, as will be shown in a few simple examples. The purpose is not to develop a rational method of determining safety factors, but to provide an insight of its effect on the performance and other aspects of structures.

Definition of Factor of Safety

The factor of safety is a fraction denoting the ratio between the maximum load-carrying capacity and the design load. If the maximum capacity, or resistance is more than the design load, then this fraction is larger than one (structure safe); if the resistance is less than the design load, the fraction becomes less than one (structure unsafe). Instead of maximum load-carrying capacity and design load, other quantities characteristic to the performance may be used. It might be more practical to relate the service conditions, not to the ultimate characteristic, but to some other limitation corresponding to the useful or service limit of the structure.

The need for a factor of safety larger than one has never been questioned, due to the inherent imperfections, errors, uncertainties and ignorance of all human endeavors, from which structural engineers are not exempt. Both the numerator and denominator of the fraction representing the factor of safety are subject to fluctuation. These fluctua-

tions are due to simultaneous variations of many components:

1. Uncertainty in the live load assumptions.
2. Errors in dead load computations.
3. Uncertainty or ignorance as to the physical characteristics of materials.
4. Imperfections or inadequacy of assumptions and methods of stress analysis.
5. Imperfections of workmanship in the execution of the design.

These components may cause, in two different ways, a reduction of safety:

- (a) *Through decrease of the load-bearing capacity* (because of the lower performance of the materials than was assumed).
- (b) *Through increase of the computed stresses or strains* above the actually existing values (because of increase of the loads over those assumed, or because the values given by stress analysis are less than the ones actually existing).

The true factor of safety, therefore, differs from the nominal value by the extent of the above variations. And this factor of safety, which incorporates all predictable unfavorable variations, cannot be less than one in a safe structure.

Actual Safety Factors

Considering actual numerical values connected with safety factors, the mistaken notion that all ordinary structures are designed with very large safety factors can be dispelled. Actual facts contradict such statements: the working stress used in steel structures is, for instance, 1.75 times that of the yield point strength of the steel.

But this does not mean that such members are 1.75 times as strong as they are supposed to be. This will only happen if the capacity of the actual structure corresponds exactly to the

* This article is based on excerpts from a chapter of a book Mr. Weidlinger is now writing to be published by F. W. Dodge Corporation.

design assumptions. In a simple practical example, the implication can be observed:

A 1 by 1 in. steel tension bar will support 10 tons with a factor of safety of 1.75. This means that if the yield strength and the dimensions of the bar are exactly as specified, it will support 17.5 tons before a permanent deformation will occur. But this also means that if the bar were fabricated to a size of $\frac{7}{8}$ in. square instead of 1 in. square (an error of only 15 per cent), and the load happens to be 27 per cent higher than was estimated, then failure will occur. It can be seen that these figures show no relationship to the safety factor of 1.75.

With advancing technology in the production of building materials and improved design methods, it seems only natural that the safety factors employed should be correspondingly reduced. There is always a certain lag between such improvements and the corresponding revisions in building codes. A case in point is structural steel. The strength characteristics of this material have improved so rapidly that during a certain period before codes were finally revised a higher factor of safety was used than in earlier times.

In view of such anomalies, it has become the mark of any progressive architect or engineer to criticize building codes, and especially safety factors, as being archaic. While such criticism is often justified, the argument used to

support it is, in most instances, equally antiquated.

The question boils down to what is actually meant by the factor of safety. As long as it is regarded as some sort of a measure of the actual safety of our structures, such criticisms can produce no fruitful conclusions.

Probability of Failure

The preceding discussion might have helped to clarify the purpose of the factor of safety or may have only brought into focus some of the complexities of the problem, but it could not tell anything about how big the safety factor should be. At the present time the factors of safety for various materials, types of structures and loading may vary anywhere between 1.3 and 10. They are based on the past experiences and judgment of competent engineers.

The meaning of a given factor of safety is quite nebulous. A factor of 2, for instance, does not mean that a structural element will break or reach its service limit if the design load is doubled. Depending on the chance fluctuation of components it may take considerably more or less than double of its design value.

The real measure of safety of a structure is not the magnitude of the factor of safety but the numerical value of its probability of failure. This is actually recognized even in our present day practice, through the use of various factors of safety for different parts of

the same structure or for different types of stresses.

This practice seems to contradict the basic common sense rule that the chain is only as strong as its weakest link. What is the use of making some links in structures weaker than others? The answer lies that in the judgment of the designer (or authors of building codes), the chance of failure is less for some elements than for others.

The cables of suspension bridges, for instance, are made of very carefully controlled materials, so the actual stress can be calculated with greatest of precision. The probability of failure of the cables therefore is less than that of any other main structural element of the bridge. For this reason a lower factor of safety is used in the design of the cable than in other parts.

In terms of the factor of safety, the cable is the weakest link in the whole bridge; in terms of probability of failure, it is probably the strongest.

If the probability of failure is the more rational measure of safety, then the question arises as to the suitable value which should be assigned to it. While a certain factor of safety does not tell anything about the actual safety of a building, the fraction expressing the probability of failure at least permits an estimate.

Mathematical Probability

Mathematical probability is a fraction which can vary between zero and one.

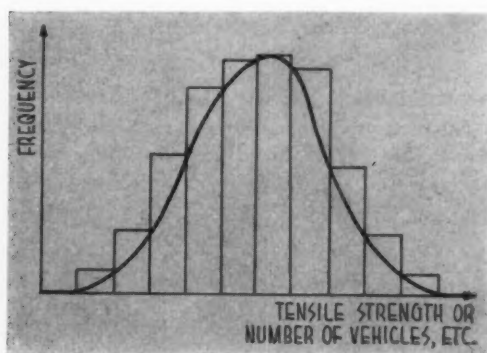
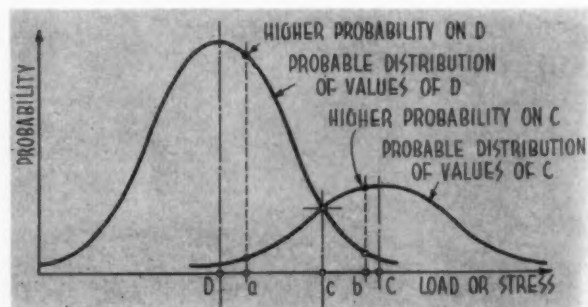


Fig 1. Frequently with a large collection of data, specific numerical values tend to occur more often than other ones. Their distribution can be represented on a "distribution curve." For example, such curves can be drawn for the tensile strength of steel, or for the number of trucks counted in a total number of vehicles passing over a certain bridge

Fig 2. In the design of a particular structure, the values selected for the design load and the load-carrying capacity might in actuality be slightly different due to various inaccuracies. If sufficient statistical data were available on other structures of the same type, it would be possible to plot distribution curves for the design load "D" and the load-carrying capacity "C." Under ideal conditions, the load would be at "D" and the load-carrying capacity at "C." If a failure occurs at "a," there has been overloading, if at "b," the material is at fault, if at "c," it is equally probable that either cause may be at fault



This fraction expresses the probability of the occurrence of an event, whether it will occur one out of 10 times, one out of 1000, etc.

A probability of one means the certainty of occurrence of an event and zero means the impossibility. In applying this to the safety of structures one endeavors, naturally, to obtain a value very close to zero for the probability of failure.

A complete certainty is impossible to obtain, not only in structural design, but in all human activities based on inferences. The best which can be done is to determine the probability of failure and employ the most careful methods of execution.

Marcel Prot, a French engineer, points out that the probability of fatal accidents lies generally between 0.1 and 0.0000001 and adds that experience shows that a chance of 0.0000001, i.e., one in ten million, is considered completely negligible "... even if such accident should cost us our life . . . !"

There are only few instances at the present time where it is possible to estimate the probability of failure of structures because of the lack of the necessary statistical data.

The establishing of a desirable value for the probability of failure does not need to be based on a moral judgment of justification of fatal accidents. More compelling economical considerations usually decide or influence this choice.

It is clear that any attempt to predict or estimate the probability of failure of a structure requires the availability and rational interpretation of data which are relevant to the behavior of the structure. There are only a few instances at the present time where this is possible because of the lack of such data.

The structural engineer is interested in the average and maximum load which will be applied on a building during its lifetime, and in the average and maximum strength of the materials which are used in it. All these data are (or should be) determined on the basis of observations.

In many instances a large collection of such data exhibit certain tendencies — specific numerical values tend to occur more often than other ones. Their distribution can be graphically represented in the so-called distribution curve. Such curves can be drawn, for instance, for the tensile strength of steel (Fig 1), or for the number of trucks counted in a total number of vehicles passing over a certain bridge and for most similar types of observations.

Most such curves exhibit a more or less pronounced peak for certain groups. These groups are the ones which will occur most frequently. The uniformity of the group is an important characteristic and is expressed by the dispersion of the observed values around the peak of the curve.

The measure of the dispersal is the "standard deviation" which is the horizontal distance from the peak to the point from where the dispersal becomes more pronounced.

In light of the above discussion and terminology, the factor of safety can be redefined. The capacity *C* and the design load *D* are mean values of collected data which would be found at the peaks of distribution curves on capacities and design loads. The fluctuations of *C* and *D* will depend on the standard deviations corresponding to the distribution curves of *C* and *D*.

Let us assume that it were possible in a given case to represent the distribution of the various values of the capacity and of design loads in two curves drawn on a common coordinate axis (Fig 2). Assuming that the capacity is proportional to the ultimate stress and the design load to the working stress, then the horizontal axis gives the various stresses in pounds per square inch and the vertical axis measures the probability (or the frequency) of the occurrence of such stresses.

As can be seen on the graph, the stress corresponding to the peak of the design stress (load) is less than that corresponding to the ultimate stress (load-carrying capacity), as would be normally the case.

Under ideal conditions the ultimate stress of the material will be exactly at *C* and the actual stress, due to service loads, exactly at *D*. If, however, failure occurs then the ultimate stress and the actual stress will coincide at the moment of failure. This might happen at any value of the stresses due to some unfortunate coincidence of variations enumerated earlier.

Let us consider three different values of the failure stress located on the horizontal axis of the graph at the points *a*, *b* and *c*. For each of these cases certain conclusions can be drawn:

If failure occurs at "*a*," then it could be attributed to overloading since the existence of an ultimate stress of this value is more probable (or frequent) than the occurrence of an overstressing at the same value.

If failure occurs at point "*b*," then the opposite situation exists, and it

should be attributed to the material.

Finally, if the failure occurs at "*c*," then it can be attributed neither to material failure nor to overloading, since the existence of this stress is equally probable for both the ultimate value and the actual stress.

Through the application of statistical methods, it can be shown that the probability of failure is a function of two sets of variables:

- (1) The difference between the values of *C* and *D*, and
- (2) The standard deviations of *C* and *D*.

The first statement is equivalent to the classical concept of safety, since it means that the probability of failure depends on the difference between capacity and service load.

The second statement introduces the statistical concept, inasmuch as it states that the probability of failure is also influenced by the fluctuation of the values of *C* and *D*. This means that the safety of the structure also depends on the quality control of the materials used, the precision of the design, etc.

Safety of Structures

Most of our structures are made up of many component parts, or, at least, their strength characteristics are determined by a large number of small effects. Typical in this respect is a cable of many strands or laminated wood. Lumber is ordinarily not free from localized defects which reduce its strength.

If such a member is sliced into thinner sections and these are again reassembled in a random manner and glued together, then the probability of the coincidence of all imperfections in the same vertical section of the member will be smaller than some other more favorable arrangement (Fig 3 *a*, *b*, *c*). It has been estimated that under certain conditions, 8 to 10 laminations will justify an increase of 100 per cent in the working stresses in laminated members over the solid section.

The service load applied to structures exhibits similar properties. The critical loading, i.e., one that produces maximum stress or strain in a given part of a structure, is usually a combination of a number of loadings in a specific pattern. In structures made up of a large number of components with many possible patterns of loading, the probability of occurrence of the critical loading is smaller than that of less patterns.

This can be seen in considering the columns of a multi-story building. The

maximum load on the first floor column will exist if all floors above it are loaded. This loading pattern, with all floors loaded, is only one of many other possibilities, any of which will produce a lesser load on the column than the first mentioned one. This can become rapidly a very high number with increasing number of floors; if there are 8 floors, there are 255 possibilities; with 20 floors, 1,948,575 possibilities; with 64 floors, the number of possibilities has 20 digits. This fact is recognized in most building codes which do not require the lower columns of multi-story buildings to be designed for the full loading of all floors above it.

Generally, the larger the number of small effects of a structure which make up its strength characteristics, the lesser will be the probability of failure.

There is, however, a second important fact favoring the structural engineer. This has to do with the difference between the assumed and actual behavior of our building materials. It has been said that the only reason why we are able to design our structures is that we are permitted to assume that they behave elastically (deformations are proportional to the stress) and the only reason for their remaining undamaged is their unelastic behavior.

This facetious opinion is uncomfortably close to the truth. Ordinary structures are designed on basis of classical structural theories, the assumption of which is, in all instances, that the building materials are ideally elastic and after removal of loads the deformations disappear.

These assumptions are necessary to permit the application of relatively simple methods of analysis, but they have only a limited relationship to the actual behavior of materials. In reality, the elastic behavior is obtained only for a certain limited range of stresses which are below those which would exist at the moment of failure.

The mechanics of the failure itself have not been entirely clarified for all types of materials, but it is clear that at failure only very few are truly elastic. As a matter of fact, many of our structural materials show a more or less marked plastic behavior (permanent deformation) at high stresses and strains. This behavior changes the initial statical and geometrical configuration of the structure, and therefore the initial assumptions as to the distribution and magnitude of stresses become meaningless.

This can be observed especially in

statically indeterminate structures (a girder fixed at both ends, for example) which, at high loads, due to the formation of "plastic hinges," are transformed into determinate structures. With the girder fixed at both ends, due to yielding at the supports (i.e., formation of plastic hinges), the structure is transformed gradually into a simply supported girder. During the course of this transformation, due to the redistribution of stresses at a certain stage, the actual load-bearing capacity may be above that of the original member.

In materials which undergo work-hardening during this process the relationships are more complex. In either case, however, the structure at the range of failure does behave differently from the assumed elastic state. Such differences account for the higher load-carrying ability than predicted by the elastic theory.

A significant advance, taking into account the above considerations, is the theory of limit design. As the name implies, it takes into account the limit of strength of the members to be designed, recognizing, however, that this limit is reached at the unelastic range of the material. Investigations of structural members based on the limit design theory require some revisions of traditional concepts as to their safety.

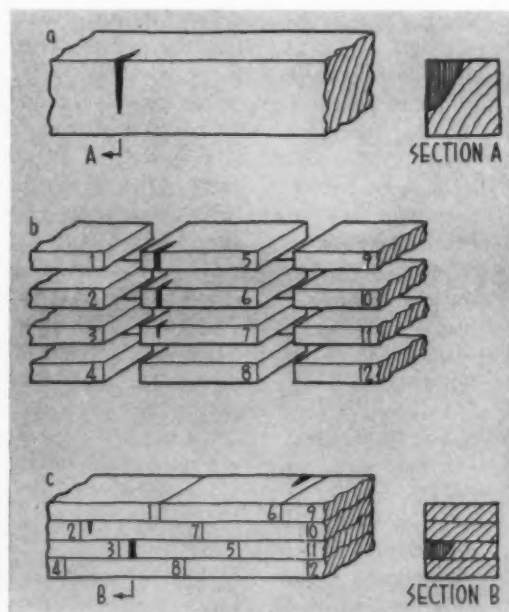
Conclusions

The design of structures needs to be based on scientific and rational methods, and such methods are available. They have been successfully employed by outstanding engineers in the past and in the present. However, this cannot be shown with respect to safety factors. The rational and scientific methods are available or are constantly being developed, but the pertinent statistical information which should be the basis of their applications are sadly lacking. In view of this, one cannot even rationally answer the question: are our buildings over-designed? The facts prove only that our buildings are not "under-designed" since fatal accidents are relatively rare.

Thanks to the theoreticians, original designing and daring engineering progress are being made in spite of the lack of objective information. Time and again the faith of these pioneers is shattered by the spectacular collapse of structures which, however, gives an added impetus to further research and revision of some basic concepts.

Barring these extreme experiences, a clearer understanding of the meaning of the safety of structures and the knowledge of the factors which influence it will necessarily result in better engineering.

Fig 3. With laminated wood (a number of thin slices of larger pieces, reassembled and glued back together) it has been estimated that under certain conditions, 8 to 10 laminations will justify an increase of 100 per cent in the working stresses as compared with a solid section



PRODUCTS for Better Building

New Coordinated System for Suspended Acoustical Ceiling

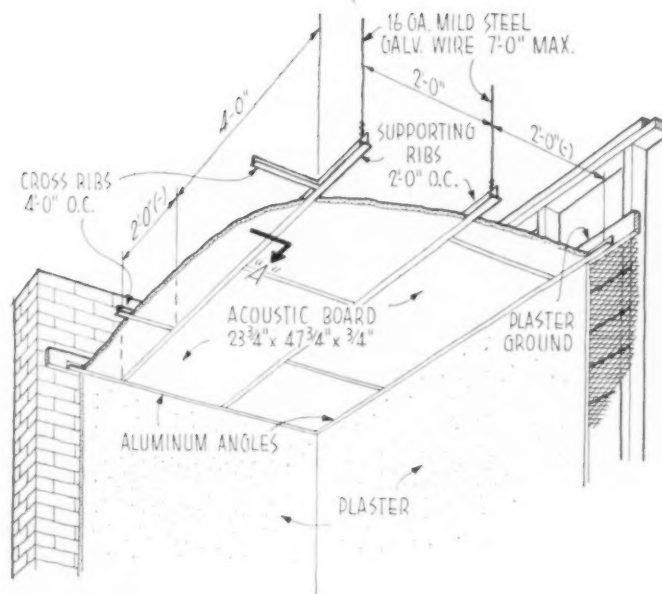
A cooperative venture undertaken by four manufacturers working closely with a client to help solve his particular problem has developed into a flexible coordinated system for suspended ceilings which is now being marketed on a nationwide scale.

When the Blue Diamond Company of Dallas, Tex., was seeking a new, simplified method for roofing supermarkets and similar areas, it called upon two of its suppliers, the Cupples Products Corporation and Owens-Corning Fiberglas Corporation, for help. Blue Diamond engineered a system employing extruded aluminum T-sections and acoustic board. Cupples helped develop a supporting grid system which can be put together, enlarged or reduced like an erector set, and Fiberglas furnished a special, thin and lightweight acoustic board in dimensions coordinated with the grid system. The scheme worked out so well that two lighting manufacturers, Day-Brite Lighting and the Miller Company, were called in to design recessed lighting fixtures which could be supported on the flanges of the grid's T-members without requiring additional support.

As it has now developed, the grid system can be spaced either 24 by 24 in. o.c. or 24 by 48 in. o.c. to accommodate two sizes of ceiling board in either regular or ashlar arrangements. The lighting layouts are extremely flexible, permitting a wide variety of patterns. Day-Brite fixtures are furnished in 2 by 2 ft and 2 by 4 ft units, while Miller fixtures are available in 2 by 4 ft and 2 by 8 ft sizes.

The Fiberglas ceiling board employed in the system is reported to provide an incombustible surface with a noise reduction coefficient of .75 and high thermal insulating value (.33 Btu for $\frac{1}{4}$ in. thick board). The board is available in two standard finishes, a white-painted, textured finish which may be repeatedly spray-painted for maintenance, and the new *Sonofaced* plastic film surface (reported in *ARCHITECTURAL RECORD*, August 1952, p. 248). The *Sonofaced* finished is reported to cost only about 10 cents more per sq ft than the regular board and provides a washable

(Continued on page 246)



Suspended ceiling system, shown in diagram above with acoustic board resting on flanges of extruded aluminum T-members. Left, workman installing acoustic panel in grid framework. Note suspension wires

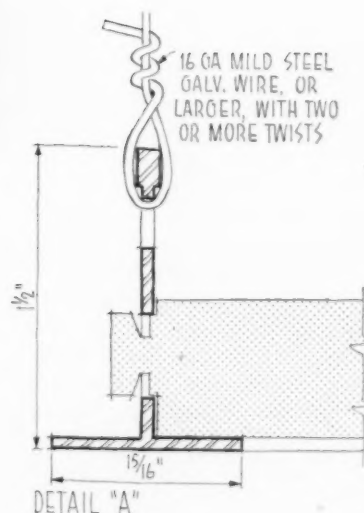


Diagram at right shows assembly and attachment for section A in sketch of system at top of page

LITERATURE FOR THE OFFICE

Air Infiltration Through Windows

Air Infiltration Through Weatherstripped and Non-Weatherstripped Windows, by C. E. Lund & W. E. Peterson. University of Minnesota Institute of Technology, Engineering Experiment Station Bulletin No. 35. Report discusses results of a three-year research program conducted by the University of Minnesota Engineering Experiment Station in Cooperation with the Weatherstrip Research Institute. Supplementing original studies carried on from 1924 to 1931, the report includes material related to improvements and changes in building construction during the past 20 years. Among the various factors dealt with in the booklet are the following: effect of crack and clearance in window fit; effect of groove clearance on weatherstrip; effect of weatherstripping; effect of locking windows; comparison of infiltration and exfiltration through windows; effect of sash shrinkage; effect of one-piece storm windows. Drawings and photographs of the equipment used in making the tests are included, together with performance tables and charts. 47 pp., illus. Weatherstrip Research Institute, Box 101 Riverside, Ill.

Color Scheme Files

Interior Color Suggestions For (1) *Hospitals*, (2) *Hotels*, (3) *Industrial Plants*, (4) *Offices*, (5) *Schools*. These five companion booklets, each with a handy file tab for quick identification, together form a reference file of color schemes for interior decoration of buildings in the enumerated categories. Each has an introduction dealing with special consideration and problems for the particular building type and a set of sheets with color samples. The samples illustrate three separate schemes — ceiling, sidewall and accent, dado or base colors — for particular individual areas in each kind of structure. 92 pp., illus. Devoe and Reynolds Co., Inc., 787 First Ave., New York 17, N. Y.*

* Other product information in Sweet's File, 1952.

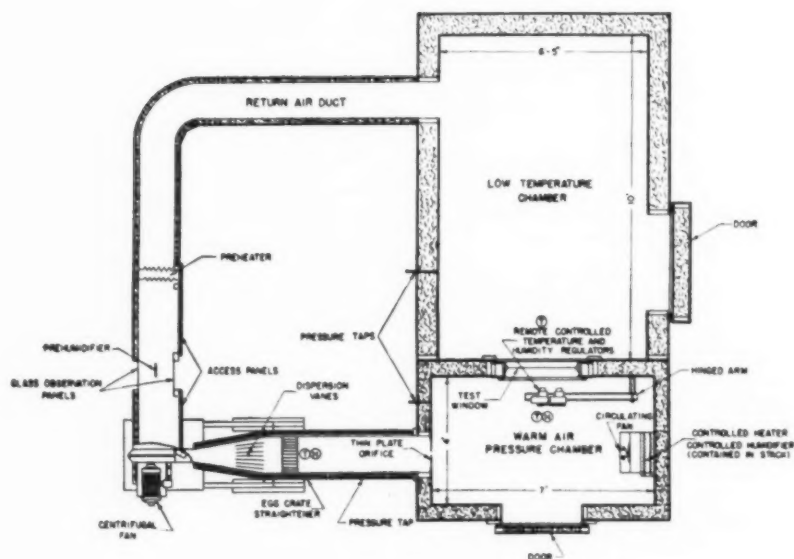


Diagram shows test apparatus used to determine air leakage through windows

Acid-Proof Materials

(1) *Eonile Pipe and Fittings*, Bulletin 139; (2) *Acid Proof Construction*, Bulletin 160; (3) *Eonile Lacquer*, Bulletin 190. Technical bulletins describe the manufacturer's acid-resistant materials for construction. The first deals with pipe and fittings designed to handle most mineral acids, alkalis and organic solvents. The second booklet discusses methods of constructing acid-resistant pickling and plating tanks; process tanks, vessels and towers; pickling and plating basins and floors. The third bulletin describes a coating for interior or exterior surfaces. 6 pp., 5 pp., 4 pp., all illus. Aqua-Therm, Inc., 37-53 N. Torrence St., Dayton 1, Ohio.

Aluminum Window Sash

Thermo-Sash. Brochure describes the features of the manufacturer's new aluminum window sash. Details of the different series are shown, as are examples of the various installations in which the sash may be employed. 8 pp., illus. Kesko Products, Inc., Bristol, Ind.

Remote-Control Dictating System

Edison TeleVoicewriter — The Tele-voice System. Brochure describes in detail a remote-controlled dictating system for institutional, commercial and industrial use. Informative text is accompanied by photographs of the various available models. Data on switchboards, wiring and wire sizes is also included, and diagrams illustrate typical installation details. 12 pp., illus. Thomas A. Edison, Inc., West Orange, N. J.

Prefinished Wallpanels

The Facts About Prefinished Wallpanels. Pocket-sized booklet has been designed to acquaint the reader with prefinished wallpanels — what they are, how they are used, how applied and where they may be obtained. Answers are furnished to questions frequently asked about this material. 8 pp. Prefinished Wallpanel Council, Keith Bldg., Cleveland 15, Ohio.

(Continued on page 302)

STRUCTURAL FORMS-8: Long Spans in Wood

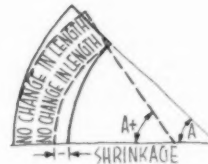
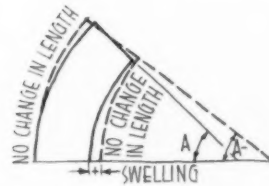
By Seymour Howard, Architect, Instructor at Pratt Institute

SPECIAL CONSIDERATIONS FOR CURVED MEMBERS

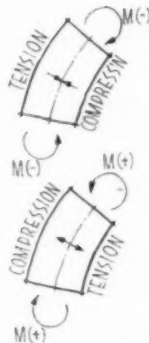
REDUCTION IN ALLOWABLE STRESS



EFFECT OF CHANGE IN MOISTURE CONTENT



RADIAL STRESS CAUSED BY BENDING OF CURVED MEMBER



NEGATIVE MOMENT creates compressive radial stress, stress should not exceed allowable compressive stress perpendicular to grain

MAXIMUM RADIAL STRESS OCCURS ON CENTERLINE PLANE

$$\text{Magnitude} = \frac{3M}{2Rbh}$$

POSITIVE MOMENT creates tensile radial stress; stress should not exceed (soft woods) $\frac{1}{3}$ allowable shear stress; (hardwoods) $\frac{3}{4}$ allowable shear stress

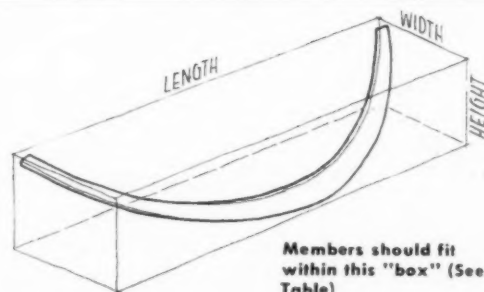
FABRICATION CONSIDERATIONS

Transportation clearances

The gluing of laminated wood members is not adaptable to normal job site conditions. Minimum glue pressures are about 100 lbs./sq in. Clamping times, curing processes and temperatures must follow adhesive manufacturers' recommendations closely. Nailing instead of clamping for pressure is not permitted.

Therefore, laminated wood members are best produced in a factory under controlled conditions of humidity, temperature and cleanliness. The size of members is determined by transportation facilities, underpass clearances, state laws on trailer sizes, etc., between factory and job site.

In planning a building for laminated wood construction the architect should contact fabricators as soon as possible.



TRUCK

RAIL

SHIP

	USUAL	MAX	USUAL	MAX	
Length	45'	80' (110' has been done)	50' (box car) 60' (gondola)	65' 120'	No limitations except size of ship and access to shipping piers by fabricator and by building contractor (site location)
Width	8'	8'	9'-8"	9'-8" 6'-8"	
Height	12'-6"	14'-0"	9'-8" (box) 12'-6"	14'-6"	

Note "Usual" dimensions require no permits; "maximum" dimensions require special truck permits or approved routings by railroad.



St. Francis Hospital, Trenton, N. J. The new \$3,000,000 8-story addition, shown at left, is now under construction. Architects and Engineers: Schmidt, Garden & Erikson, Chicago. Heating Contractor: Wm. F. Hindley Co., Trenton. Operation of St. Francis Hospital is under the direction of the Sisters of the Third Order of St. Francis.

MEET HOSPITAL REQUIREMENTS *with Modern Controlled Steam Heating*

Balanced Heating . . . Outdoor Thermostat Control . . . Continuous Steam Flow . . . First applied to modernize older buildings . . . Now being installed in new addition.

Schmidt, Garden & Erikson, Chicago Architects and Engineers noted for their hospital work, are the creators of the completely modern addition now being erected alongside the older buildings of famed St. Francis Hospital, Trenton, New Jersey. This new addition will have modern controlled steam heating incorporating the proven principles adopted in modernizing the original vacuum heating installation in the existing buildings.

The three original buildings, the most recent completed in 1927, were overheated, indicating fuel waste and involving considerable maintenance. In 1949 the original system was changed to a Webster Electronic Moderator System by John G. Carr Co., Inc., Trenton heating contractor.

Reporting results, Chief Engineer A. P. Scharer said that the modernization was

paid for out of fuel oil savings in less than two years. Further, these older buildings are comfortably heated, with a noticeable absence of overheating in mild weather.

Is your hospital in need of modernization? It will cost you nothing to investigate. There are Webster representatives in 65 cities experienced in working with owners, architects, engineers and heating contractors in the solution of specific heating problems. Ask to see your Webster Representative.

Address Dept. AR-10

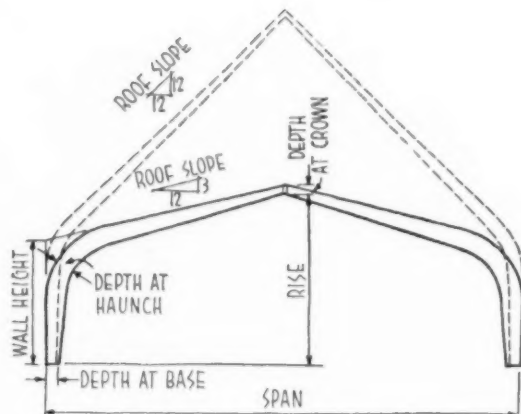
WARREN WEBSTER & COMPANY
Camden 5, N. J. Representatives in Principal U. S. Cities
In Canada, Darling Brothers, Limited, Montreal

WEBSTER
MODERATOR
SYSTEM
OF STEAM HEATING
"Controlled by the weather"

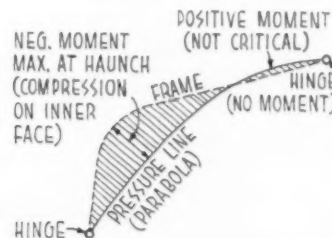
STRUCTURAL FORMS-9: Long Spans in Wood

By Seymour Howard, Architect, Instructor at Pratt Institute

THREE-HINGED RIGID FRAMES



Note: Two-hinged rigid frames (as described in TSS sheets on rigid frames in steel, December 1951) are impractical in wood. Fabrication and transportation usually require frame to be made in two parts. A crown connection to take the midspan moment of a two-hinged frame is impractical in wood.

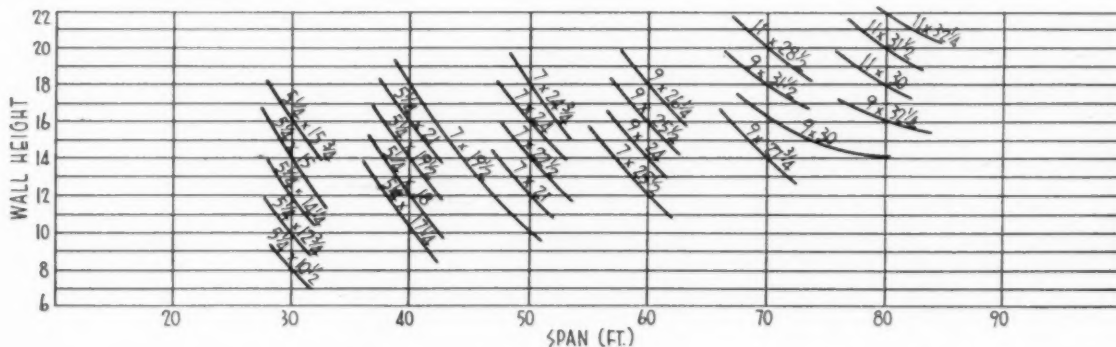


TYPICAL MOMENT CURVE

Three-Hinged Frame

Uniform loading across entire span (half span only shown)

Note differences between this curve and pressure line for two-hinged frame (Fig 2, Sheet 2, Rigid Frames in Steel)



For vertical load of 1000 lbs/lin ft of span—no wind load (wind load may require heavier sections) and roof slope of 3 in 12 (steeper roof slopes require smaller sections down to about 85 per cent of depth for 12 in 12 slope)

Notes: Based on $f = 2600$; $c = 2000$ lbs/sq in.

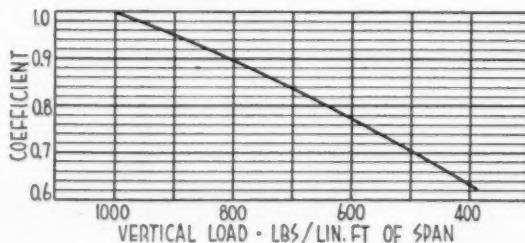
For preliminary approximation of depth at base use:

$$0.4 \times (\text{span in feet})'' - 4''$$

For depth at crown use: $0.1 \times (\text{span in feet})'' + 4''$

DIAGRAM OF FRAME SECTIONS AT HAUNCH (Width'' x Depth'')

(For Preliminary approximation only)



Multiply depth of section by coefficient for other loadings. (Width remains as shown on frame section diagram)

Width Given (b ₁)	Width Wanted (b ₂)	Multiply Depth By = $\sqrt{b_1/b_2}$
3 1/4 in.	5 1/4 in.	0.787
5 1/4 in.	3 1/4 in.	1.272
5 1/4 in.	7 ft.	0.866
7 in.	5 1/4 in.	1.155
7 in.	9 in.	0.882
9 in.	7 in.	1.134
9 in.	11 in.	0.904
11 in.	9 in.	1.106

Effect of varying width of section on depth of section for constant section modulus



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**A dramatically beautiful
Sound Conditioning
material unlike any
other you have
ever seen!**

Rich, linen-like
surface that gives
better light
diffusion.

Sharp perforations
of varying size,
arranged in random
fashion.

Pattern that
minimizes joint
lines, for beautiful
overall effects.

Acousti-Celotex RANDOM PATTERN Perforated Tile



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Acclaimed the most unusual, most beautiful Sound Conditioning material in 20 years, it offers exciting new decorative possibilities for interiors of every type! Smart, dramatic effects impossible with any other Sound Conditioning product!

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ated Tile has high sound-absorbing value. Two coats of tough finish, bonded under pressure of a hot knurling iron, give it a surface of superior washability. Can be washed *repeatedly* and painted *repeatedly* without impairing its sound-absorbing efficiency.

ASK YOUR DISTRIBUTOR to show you the new Acousti-Celotex RANDOM PATTERN Perforated Tile. If you don't know where to reach him, write to The Celotex Corporation, Dept. B-102, 120 S. LaSalle St., Chicago 3, Ill. In Canada, Dominion Sound Equipments, Ltd., Montreal, Quebec.



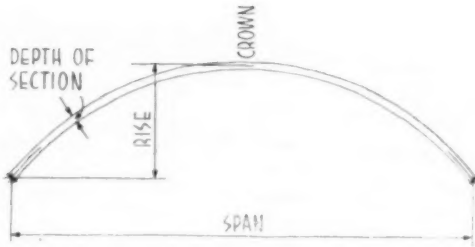
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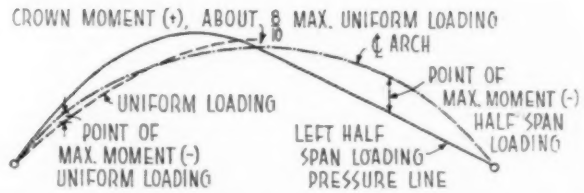
STRUCTURAL FORMS-10: Long Spans in Wood

By Seymour Howard, Architect, Instructor at Pratt Institute

TWO-HINGED SEGMENTAL ARCH

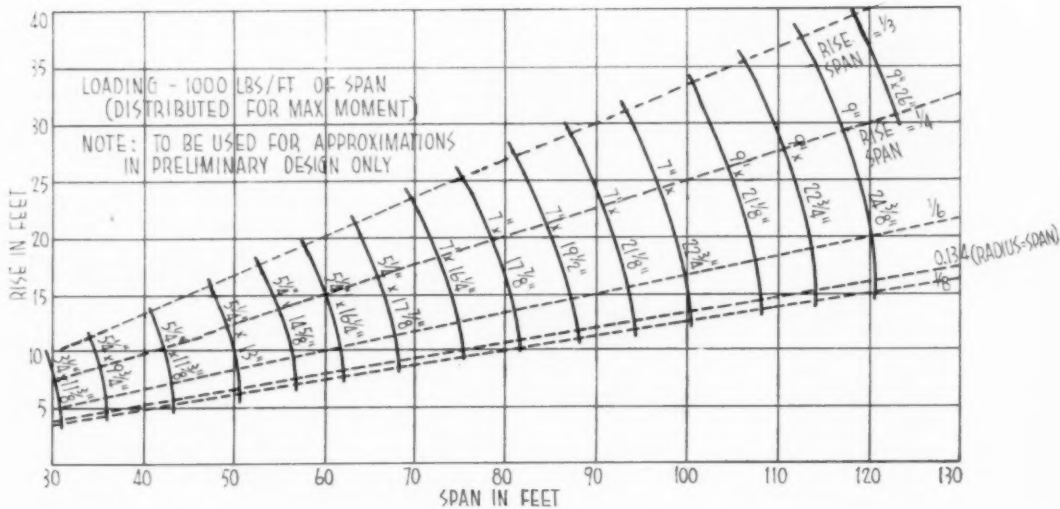


Three-hinged arch similar, with joint at crown



TYPICAL BENDING MOMENT CURVES FOR TWO-HINGED ARCH

Notes: Although the pressure line apparently passes through the centerline at the crown, it may be actually slightly below, indicating some negative moment at this point. For a three-hinged arch, of course, the pressure line for this and all loadings must pass through the centerline of the arch at the crown.



TYPICAL SECTIONS—TWO-HINGED SEGMENTAL ARCHES

Based on $f = 2600$ lbs/sq in.; $c = 2000$ lbs/sq in.
For other loadings, multiply depth of section by coefficient from diagram
To vary width of section, multiply depth by coefficient from diagram
For preliminary approximations, use this diagram for three-hinged arches also

RADIUS =

$$\text{SPAN} \left[\frac{1}{8} \times \frac{\text{SPAN}}{\text{RISE}} + \frac{1}{2} \times \frac{\text{RISE}}{\text{SPAN}} \right]$$

FOR RISE/SPAN	SPAN X Coeff Below = Radius	NOTES
1/4	1.0625	This ratio commonly used for stock arches
0.134	1.00	
1/7	0.946	
1/8	0.833	
1/5	0.725	
1/4	0.625	
1/3	0.542	This ratio commonly used for stock arches

Big savings in big buildings

...WITH THE FITZGIBBONS "D" TYPE STEEL BOILER



EXTRA LARGE COMBUSTION CHAMBER for the efficient burning of any fuel — oil, gas, or coal, stoker or hand-fired.

RAPID WATER CIRCULATION induced by the concentration of heat at the high point of the fire-box crown sheet, brings more water in contact with more heating surface in a given time. The result is:

QUICK HEAT TRANSFER, with no time lag to cause waste of fuel. Here is a saving that adds up. The bigger the building the bigger the saving.

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This is the quality boiler that is supplying heat in thousands of commercial and public buildings. Eighteen sizes, from 528,000 Btu to 10,200,000 Btu. For details and specifications write for the "D" Type Bulletin.



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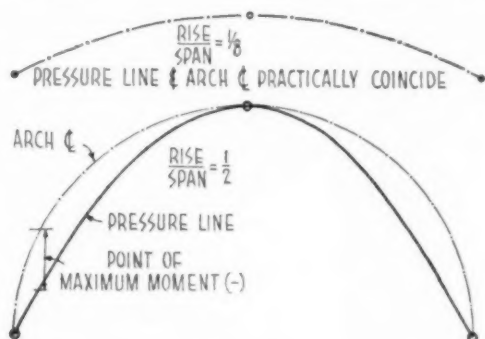


STRUCTURAL FORMS-11: Long Spans in Wood

By Seymour Howard, Architect, Instructor at Pratt Institute

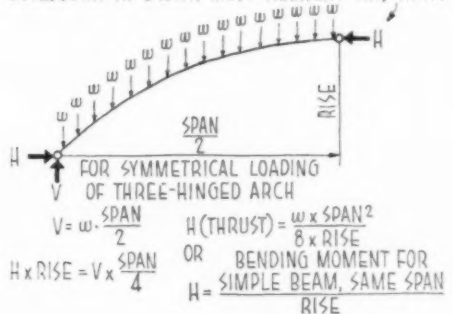
TYPICAL BENDING MOMENT CURVES FOR UNIFORM LOADING, THREE-HINGED ARCHES

(For half span loading, see sketch on sheet 10 of two-hinged arch)



Note that as $\frac{\text{rise}}{\text{span}}$ ratio increases, the shape of the arch becomes more important. In designing for high $\frac{\text{rise}}{\text{span}}$ ratios more care should be given to make arch centerline correspond to actual pressure lines. Glued laminated wood can be used easily for any shape of arch. (Constant sections are usually cheaper than variable sections)

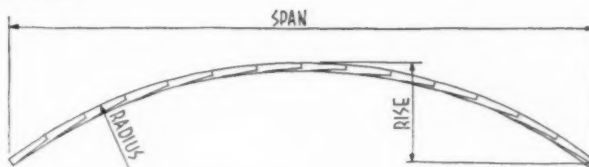
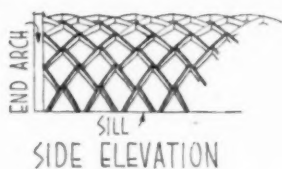
NOTE: JOINT AT CROWN MUST TRANSMIT THIS THRUST



THRUST OF THREE-HINGED ARCH

This method can also be used safely for calculating the approximate thrusts of two-hinged arches, which are slightly less

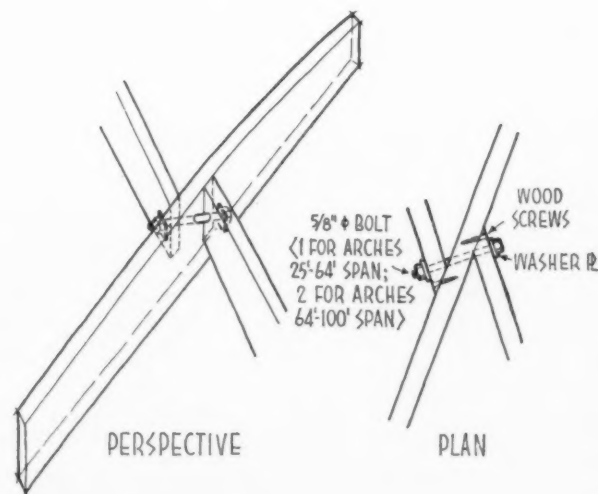
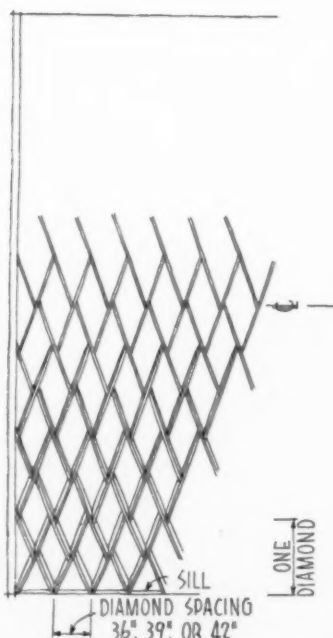
STANDARD LAMELLA ROOF CONSTRUCTION DATA



SECTION

Note that this is essentially a two-hinged arch; thrust must be taken by buttresses or tie rods

Edge support at ends of arch is essential: this may be an end arch, designed to take sideways thrust (as shown), an end arch with rafters, or a breached lamella arch (with axis at right angles and diagonal ribs at intersection). Tie rods may be used parallel to center line with lighter end arches



JOINT DETAIL

Note shape of lamella. Curvature is obtained by cutting upper edge only. Bolt size is minimum. Nails can replace wood screws

Performance Factors

of aluminum awning-type windows

Every day, more and more architects and contractors are turning toward aluminum awning-type windows. These newer, more modern windows are being specified for all types of construction, including factories, commercial buildings, apartments, hotels, schools, hospitals and homes. Over a period of years, the aluminum awning-type window has been subjected to rigid and exhaustive tests to determine its performance characteristics and operating efficiency under every known weather condition. This research has been carried on by the leading manufacturers in cooperation with leading architects.

THE "OPEN" WINDOW

One important advantage in favor of the aluminum awning-type window is that it can remain "open" to provide ventilation and fresh air circulation even when it is raining. Slanting sash is the answer. One aluminum awning-type window, the Ludman Auto-Lok, goes a step farther in this respect. The bottom sash of the Auto-Lok window is designed to remain slightly open, while the upper sash are closed tight and automatically locked. This feature allows for night ventilation and limited ventilation during inclement weather.

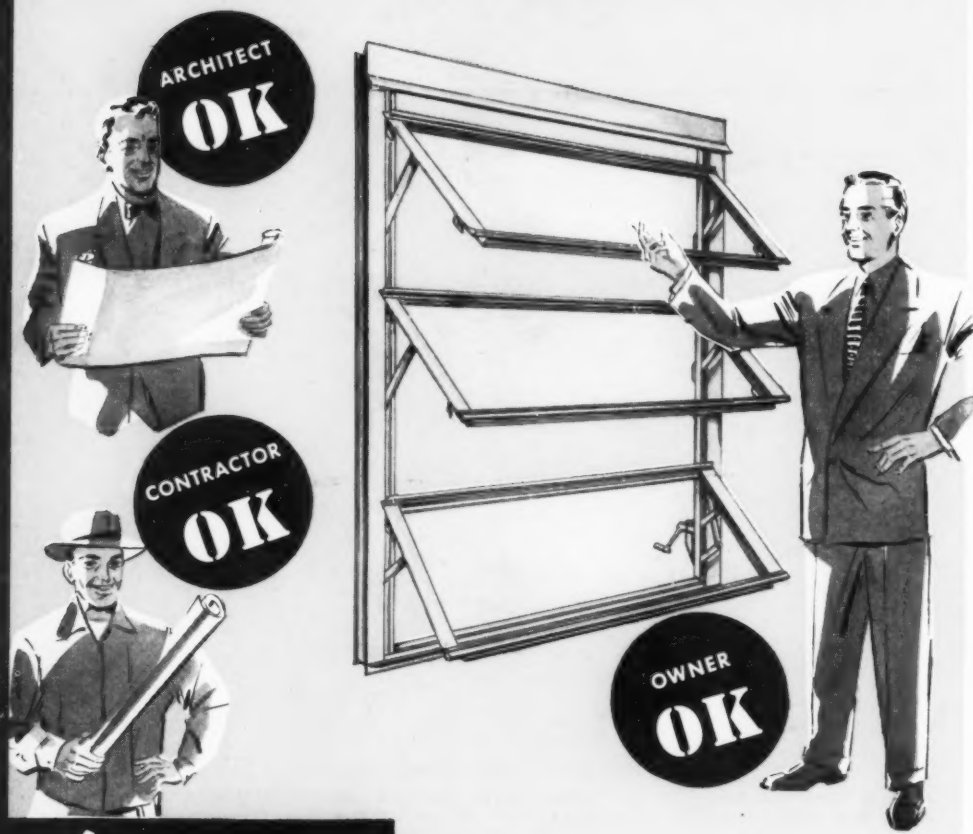
BETTER VENTILATION...easier to clean

Because of their outward projection, the vents in aluminum awning windows provide maximum possibility of attaining 100% ventilation. While not all awning windows can be opened to nearly 90 degrees (almost straight out) the degree of their opening can be predetermined by checking the manufacturer's specifications. In their wide-open position awning type windows can be cleaned from the inside. This very important maintenance factor cannot be underestimated. However, the basic design of the window must be checked. For, on certain of these types, where vents are pivoted on a fixed point, the top vent cannot be cleaned from the inside. The Ludman Auto-Lok window can be cleaned *completely*...all from the inside, top sash, too. This feature is accomplished by Ludman's uniquely designed operating hardware, in which the hinge points of the top sash float down with the mechanism when the window is opened to provide a convenient 6" opening between the top sash and the window frame.

AIR INFILTRATION

Paradoxically, the use of aluminum awning windows has for many years been retarded because of their generally unsatisfactory performance on the score of tight closure and elimination of air infiltration. Yet, today, the tightest closing

advertisement



LUDMAN
Auto-Lok
AUTOMATIC LOCKING
PATENTED
Aluminum
WINDOWS

THE FIRST WINDOW TO MAKE
Weather
TO ORDER

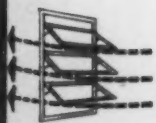


FRESH AIR WHILE IT'S RAINING...no more running to close windows. Rain can't enter through slanting sash!

WARMER IN WINTER
...because it seals itself like a refrigerator... keeps heat in, cold out!



COOLER IN SUMMER
...because it opens widest...scoops air in and up...luxurious ventilation, but no drafts!



DO YOU KNOW THE THREE STEPS TO *Successful installation?*

The window the Architect specifies...for his reasons...must work out to advantage for the Contractor...in terms of trouble-free, economical installation. Finally, from the Owner's standpoint, the successful window is the window that proves most practical...not only in the planning and construction stages, but through a lifetime of maintenance-free service and attractiveness!

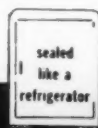
PERFORMANCE COUNTS *first*

AUTO-LOK is the first and only window made that successfully meets all window requirements...in use as well as in every step of architectural planning and construction work. No other window so completely meets the "three-way" performance requisites that result in successful window installations.

IT WILL PAY YOU TO WRITE FOR THE "HOW" AND "WHY"!

LUDMAN Corporation

BOX 4541, DEPT. AR10, MIAMI, FLORIDA



Tightest closing window ever made!

window ever made is an awning type window. This unit is Auto-Lok, developed by Ludman Corporation after many years of research. Its tight closing performance is made possible by its patented hardware, a self-locking device which automatically seals the window tight when closed. Auto-Lok hardware provides a closure *ten times tighter* than the popular established standards for casement windows and projected sash. Pittsburgh Testing Laboratory tests reveal that air infiltration through a standard, assembly line Auto-Lok window amounts to only 0.095 cubic feet per minute... a degree of weather-tightness heretofore thought impossible in any window. Though the Auto-Lok locking action is exclusive with Ludman, other manufacturers are beginning to use a vinyl plastic weather-stripping material similar to that which Ludman uses to weather-strip the Auto-Lok unit.

SIMPLE OPERATION

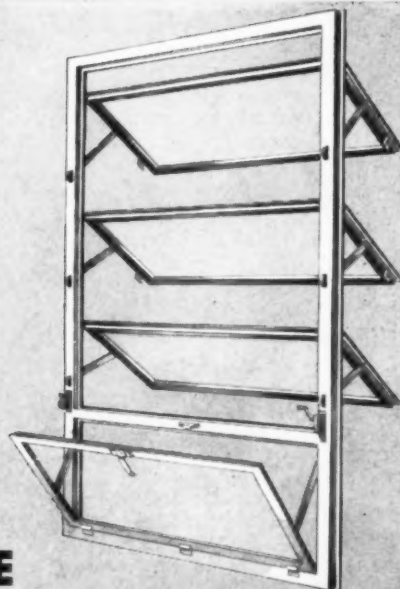
The "one-hand" operation of aluminum awning-type windows is another feature that is very well accepted... and, in many instances, one of the important deciding factors in the selection of these windows. For example, this feature is important to hospitals, where busy nurses with a tray in one hand can still open or close the windows with their free hand... saving time and trouble. Each individual manufacturer utilizes a distinct type of operator to actuate the window operating hardware. Usually they have large gear boxes to generate the great amount of force required to actuate the torque bar window mechanism. Because of their size they extend over the face of the window sill into the room. Some have removable cranks and extension drives. A study of the operating hardware of all aluminum awning-type windows reveals the fact that Ludman, maker of the Auto-Lok Window, has the most efficient mechanism from the standpoint of easy operation and trouble-free service. The automatic, self-locking principle of the patented Auto-Lok operating device eliminates torque strain required to force the hinges in order to pull individual sash in tight against the frame. In fact, the Auto-Lok mechanism is so perfectly balanced and requires so little pressure that a child can operate the windows.

THE IDEAL WINDOW for any installation... in any climate

The aluminum awning-type window is practical from every standpoint. Installations all over the world, in all climatic extremes, have proven their practicability. Their attractive horizontal lines make them entirely adaptable to all types of architectural design from cottage to skyscraper. Their rapidly growing acceptance is having a marked influence on architectural designs because their clean horizontal lines fit admirably into modern architectural styles.

Seals itself shut like a refrigerator

THE FIRST WINDOW TO *Answer* EVERY PERFORMANCE REQUIREMENT



Read this check list for opening sash...

- ✓ **AMOUNT AND QUALITY OF VENTILATION?** AUTO-LOK checks: 100% ventilation, draft-free! Vents open almost 90°, entering air is scooped in and up.
- ✓ **POSSIBILITY OF VENTILATION CONTROL?** AUTO-LOK checks: You make your own weather! Perfect control in all positions from a slight crack of one vent to full opening of all vents.
- ✓ **IS THE WINDOW EASILY OPERATED?** AUTO-LOK checks: Friction-free, precision balanced "no wear" operation. Fingertip control with roto-type operator...no interference with screens, drapes or blinds. AUTO-LOK windows never stick.
- ✓ **WEATHER PROTECTION WHEN WINDOW IS OPEN?** AUTO-LOK checks: Awning-type design provides the luxury of healthful, refreshing ventilation even when it's raining.
- ✓ **WEATHER-TIGHTNESS WHEN WINDOW IS CLOSED?** AUTO-LOK checks: AUTO-LOK is the tightest closing window ever made! Closes many times tighter than any other window. Patented self-locking device plus elastomeric vinyl weatherstripping automatically seals window tight and isolates weather to a degree heretofore believed impossible.
- ✓ **WHAT OBSTRUCTIONS TO VIEW (RAILS AND MUNTINS)?** AUTO-LOK checks: Extremely narrow yet extra strong rails and muntins are made possible through the use of adeptly engineered extruded aluminum sections.
- ✓ **FIRST COST?** AUTO-LOK checks: Initial cost compares favorably with competing products providing many less advantages. You cannot buy better window performance at any price.
- ✓ **MAINTENANCE COSTS?** AUTO-LOK checks: Simplified operation eliminates wearing parts. No periodic adjustments necessary. Ludman engineering leadership combines the best in design, materials and workmanship to produce a window that will give no-wear operational ease with a minimum of maintenance.
- ✓ **CAN ALL WINDOW GLASS BE CLEANED FROM INSIDE?** AUTO-LOK checks: Window can be completely, comfortably and easily cleaned entirely from inside, including top vent, too. No gadgets to disengage.
- ✓ **HOW DOES THE WINDOW FIT IN WITH PLANS FOR SCREENS, STORM SASH, BLINDS, ETC.?** AUTO-LOK checks: Interchangeable inside screens and storm sash can be placed or removed easily...just flip the clips, no tools required.

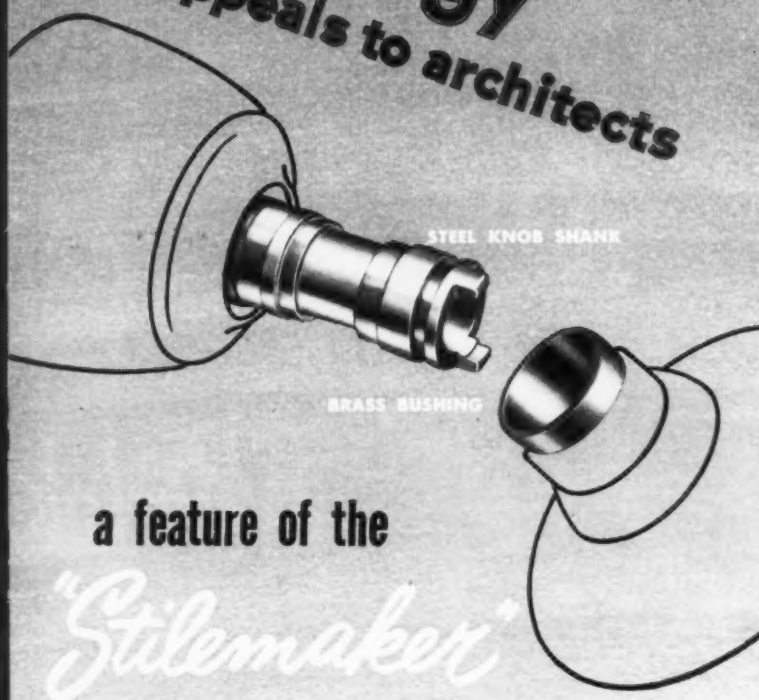
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AUTOMATIC LOCKING
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a feature of the

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From your engineering background, you'll recognize the advantage of making a knob shank of steel and bushing of brass. The use of two, time-proven bearing metals assures extra long service life ... a feature of the Russwin "Stilemaker". In addition, "Stilemaker" construction employs the same shifting roll back principle used so successfully in *UNIT locks ... another assurance of long service life as well as smooth, positive operation.

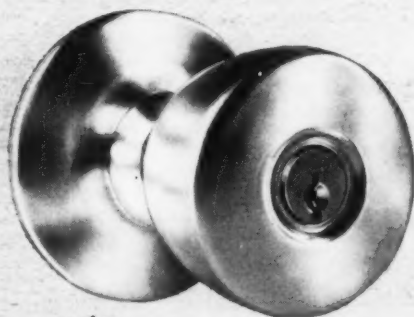
The appeal of "Stilemaker" construction is reflected everywhere in more and more architects' specifications. Russell & Erwin Division, The American Hardware Corporation, New Britain, Conn.

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Engineered to
Architect's
Specifications

All Popular Functions

Knob Styles ...
in wrought or cast
bronze or brass



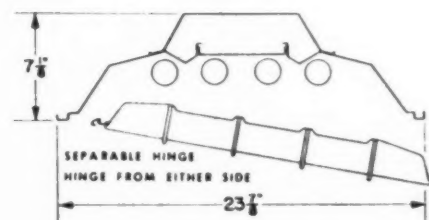
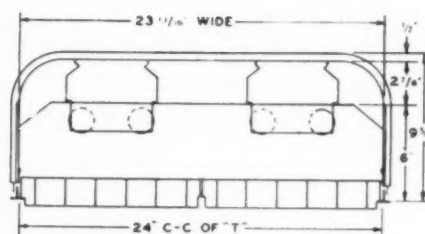
RUSSWIN[®]
"Stilemaker"

Architectural Engineering

PRODUCTS (Continued from page 233)

surface in a choice of several colors. At present it is available only in the 24 by 24 in. size. If desired, additional insulation such as the manufacturer's *Aerocor* blankets may be installed above the ceiling, eliminating the need for additional insulation above the roof deck and helping to reduce heating and air conditioning costs by concentrating all thermal insulation at the ceiling line.

The Day-Brite fixtures, known as *Mobiler*, are available in square or rectangular units and may be combined in



Lighting units for ceiling system are made by two manufacturers. Top, Miller Co. fixture. Bottom, Day-Brite unit

an unlimited variety of arrangements. Each size is available in 2, 3 and 4-lamp fluorescent units. Each can be furnished with panels of glass, molded plastic or louvers. Separable hinges permit hinging from either side and the units may be used singly or mounted end-to-end or side-by-side. Fixtures may be added after installation is complete simply by lifting out ceiling panels and replacing them with lighting units.

The Miller fixtures include units to accommodate 2, 4 or 6 General Line fluorescent lamps, 48 in. long, and 2, 4 or 6 T12 Slimline lamps, either 48 or 96 in.

PRODUCTS

long. They are furnished with louver grills which rest on the flanges of the T-members and can be easily removed for relamping.

Further advantages cited for the new system include its light weight, averaging about 1 lb per sq ft for aluminum members and acoustic board together, and accessibility, since panels may be easily lifted from the grid for use as access panels into the space above. The light weight is reported to make possible the use of lighter structural members in new construction and to eliminate the need for additional supports in existing buildings. Further information about the system and its component parts may be obtained from Cupples Products Corp., 2650 So. Hanley Rd., St. Louis 17, Mo.; Owens-Corning Fiberglas Corp., Toledo 1, Ohio; Day-Brite Lighting, Inc., 5411 Bulwer Ave., St. Louis 7, Mo.; and the Miller Co., Meriden, Conn.

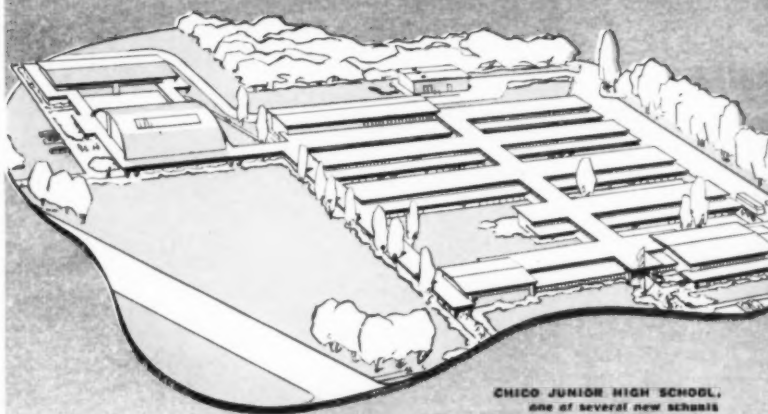
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A packaged *Kidde* automatic carbon dioxide fire extinguishing system available for installation by the customer is designed for protection of normal industrial types of flammable liquid hazards up to 6000 cu ft, but may be adapted for protection against some special hazards.

The new packaged system is said to permit substantial savings over custom-manufactured and installed system since the customer can have the installation done by his own employees. Components of the system are approved by Underwriters' Laboratories and the systems are available in six sizes of varying capacities. Each package contains temperature-rate-of-rise fire detectors, connector tubing, automatic control heads, discharge heads, multi-jet nozzles and a cylinder-supporting frame. Cylinders are shipped as a separate item. Accessory equipment for individual needs may be ordered separately, and includes remote control pull boxes for manual actuation of the system at points distant from the

(Continued on page 251)

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California...



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to be equipped with
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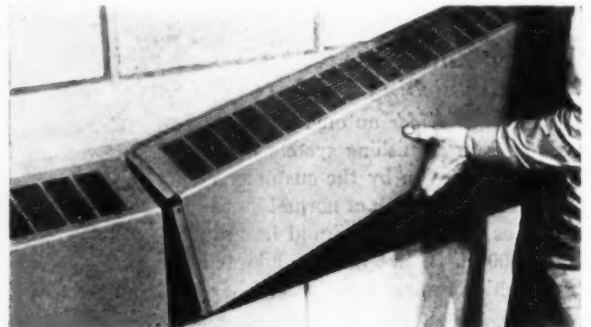
How **TRANE** can help you



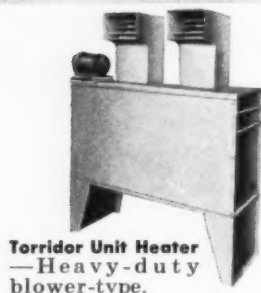
A wide variety of TRANE Convectors provides clean, quiet heat for office buildings, schools, hospitals, homes.



Model H Unit Heater with optional Lower Fin Diffuser.



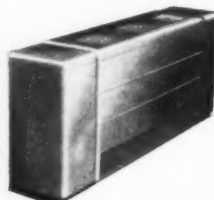
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Architectural Engineering

PRODUCTS (Continued from page 247)

cylinders; pressure-operated switches for shutting down ventilation and machinery; alarm gongs and pressure-operated sirens; and pressure-operated trips which automatically close weight-operated doors and windows when the system discharges. The system may be ordered with or without pipe and fittings.

The manufacturer advises that custom-engineered installations probably will continue to be required for areas where carbon dioxide, hydrogen, butane and the like are stored. Walter Kidde & Co., Inc., 40 E. 34th St., New York 16, N. Y.

Optical Planimeter

The *F/S Model 236/V* is a new planimeter in which the conventional-type tracing point has been replaced by a



Conventional tracing point is replaced by wide angle magnifying glass in planimeter

wide-angle magnifying glass said to prevent squinting and to make for easier and more precise operation. The tracing ring holds a large Plexiglas bi-convex lens in which is set a flat, transparent hard stone disc. This is located at the center of the lower spherical surface and has a small hole which serves as the tracing point for following the outline of the figure being plotted. The operator can look directly through the lens at the magnified line being traced. Errors of parallax are also reported to be eliminated by the device.

(Continued on page 254)

easy on the eyes, ears, feet...

AND BUDGET!

**famous GOLD SEAL
NAIRN INLAID LINOLEUM
satisfaction guaranteed!**



This handsome, durable installation in the Wall Township School, N. J., will pay dividends in beauty, comfort and economy for many years to come!





The Bowen School, Newton, Mass., has installed Gold Seal Nairn Linoleum throughout because of its rich beauty and exceptionally long wearing qualities.

The straight "A" answer to the school floor covering problem is the one-and-only Gold Seal Nairn® Inlaid Linoleum.

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may help you . . . save
you time—save your
clients money.



**Here's how this installation
problem was solved**

Large concrete window base
presented difficulty. Bottoms
of filler panel A and end pi-
laster were cut to fit diagonal
slope of base. Room dimen-
sion was too short for six com-
partments; too long for five.
Filler Panel B was added,
creating neat appearance.

**COMPARE FIAT
ON THESE POINTS**

✓ **ADAPTABILITY**
✓ **APPEARANCE**
✓ **QUALITY**
✓ **PRICE**
✓ **DELIVERY**

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All metal compartments are made of stretcher-leveled
furniture steel, cold rolled or galvanized bonderized . . .
laminated filler cemented in place under pressure.
Hardware and connections supplied. Compartments are
finished with a baked-on primer coat and two coats of
baked-on enamel in a choice of eight colors.

*Being used exten-
sively for Army and
Navy installations.
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SEE SWEET'S **22b** **FI** **ARCHITECTURAL**

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(Chicago Suburb)



Los Angeles 43,
California

In Canada: FIAT COMPARTMENTS are made by Porcelain and Metal Products, Ltd., Orillia, Ontario

Architectural Engineering

PRODUCTS

(Continued from page 251)

Other improvements incorporated in the instrument include a reset lever which brings both counting and measuring wheels to zero reading with a simple flick, and a plexiglas window which encloses the measuring wheel and prevents dust from causing loss in precision. The polar arm which connects the pole block and the wheel carriage has a spherical joint at each end, resting in a conical seat. This arrangement is said to assure accuracy and to allow easy removal of the polar arm to rearrange for compensating positions. The tracer arm has gradations from 6 to 20 thousandths of a sq in. per vernier unit and may be adjusted by a roll button. A checking gage is included with each instrument. Manufactured by Filotechnica Salmoiraghi, Milan, Italy. Distributed nationally by Trans-Global Co., 1480 Broadway, New York 36, N. Y.

Wall Coverings

Two new collections of custom print wallpapers have recently been introduced to the home furnishings market.

- The *Schumacher Group*, consisting of designs by Harry Paulsen, follows a trend to lighter backgrounds which will harmonize pleasantly with softer tones in fabrics. Most of the patterns have large repeats and incorporate a third dimensional effect. Among some of the available papers are those with an abstract appearance, scenic papers, impressionistic drawings, papers suitable for children's rooms and papers coordinated with fabrics. F. Schumacher & Co., 60 W. 40th St., New York 18, N. Y.

- The *Katzenbach and Warren Group* is composed of the designs of Ilonka Karasz, Zue Martin, James Reynolds and William Katzenbach and his staff. Each designer has interpreted his own feeling in his work, resulting in a varied collection—intended to enrich a surface, show spatial relationships, dramatically enhance a room and add textural interest. Katzenbach and Warren, Inc., 575 Madison Ave., New York, N. Y.

(Continued on page 258)

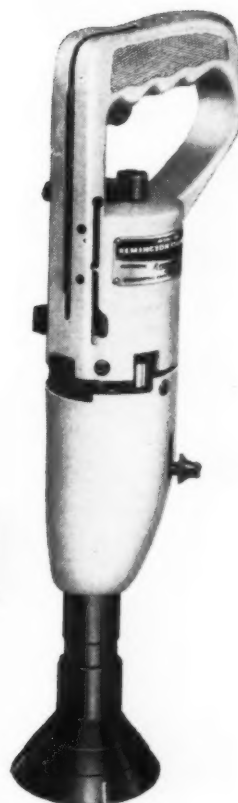
saves over \$8,000

fastening studs with

NEW Cartridge-Powered Model 450

REMINGTON STUD DRIVER

**Revolutionary new tool sets studs
in seconds... and does it safely!**



Construction job speeded at a substantial reduction in labor costs! That's the report from Straus-Frank Co., Houston, Texas, whose contract division used Remington Stud Drivers on a recent building project. In setting fastening studs for overhead air ducts, the Stud Drivers outproduced older methods eight to one... averaged 50 studs per hour, *including down time!*

Completely self-powered, the Remington Stud Driver needs no outside power source or extra equipment. The hinged construction of this lightweight fastening tool permits easy one-step loading—without the time loss of handling separate parts. Workmen like the Stud Driver's simple operation and safety features... Contractors like its lightning speed in firmly fastening steel or wood sec-

tions to concrete or steel.

The Model 450 Remington Stud Driver is made by Remington Arms Company, Inc., *America's oldest and foremost sporting arms manufacturer.*

Read the facts on the amazing pull-out resistances of Remington studs in tests conducted by the United States Testing Co. Send in the coupon below for your free copy of this informative report.

INTERNAL THREAD



Only Remington studs are identified by this target trademark on the head.

BREAK-OFF HEAD



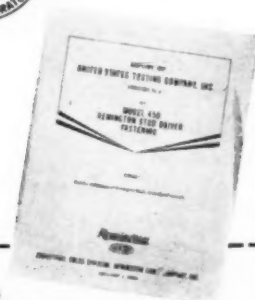
STANDARD HEAD



EXTERNAL THREAD



Listed and approved
by Underwriters'
Laboratories



"If It's Remington—It's Right!"

Remington

DU PONT

Remington Arms Company, Inc.
Industrial Sales Division, Dept. AR-10
939 Barnum Ave., Bridgeport 2, Connecticut

I am interested in obtaining detailed information on the Model 450 Remington Stud Driver.

Name

Firm

Position

Address

City State

Now you can Speed Up Work—and SAVE COSTLY DRAFTING TIME with the AMAZING NEW OZAMATIC!

New Compact OZAMATIC Does Everything Any Ozalid Machine Can Do in Copying Originals Up to 16" Wide.



Here's How Others Are Using Ozalid To Get Jobs Done Faster... With Less Drafting Time!

A Huge Auto Plant*—Ozalid is saving an estimated 840 man-months of drafting time, and is speeding up the job of changing over large plant areas from auto to aircraft production!

A Major Airline*—Ozalid copies of engineering drawings, wiring diagrams and charts make tremendous savings in drafting time.

A Famous Home Builder*—Ozalid prints of topographic maps, general and detailed housing construction plans save drafting time, speed up work.

An Air Conditioning Firm*—"Ozalid does the work of fifteen extra draftsmen" they report.

ONLY OZALID OFFERS THESE "EXTRAS"

1. Greatest background of experience in building and operating diazo process equipment.
2. Faster service and fresher materials because of nation-wide coverage by distributors.
3. Fine, dependable paper that is the "Standard of Quality" among all diazo-sensitized materials.

Find out today how the Ozalid process can break through bottlenecks and save costly drafting time in your own operations. For full details on the amazing savings made possible by OZAMATIC (or a larger machine), write today (Dept. AR-7)—Or call the Ozalid distributor listed in the classified pages of your phone book.

*Names and details on request.

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COSTS... USE

OZALID

Johnson City, New York.

A Division of General Aniline & Film Corporation. "From Research to Reality."
Ozalid in Canada—Hughes Owens, Ltd., Montreal.

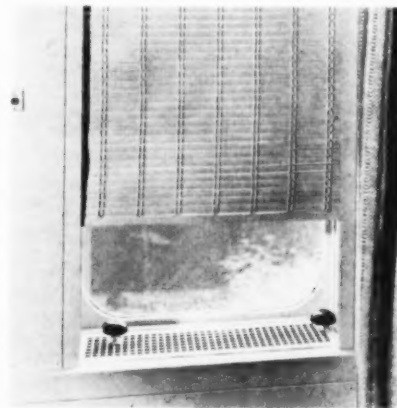
Architectural Engineering

PRODUCTS

(Continued from page 254)

Window Shades

Easily adjusted to any degree of light desired, a new *Aluminum Lattishade* has been specially designed for the windows in the Main Observation Lounge of the S. S. United States. Constructed of $\frac{5}{8}$ -in. aluminum slats, alternated with small aluminum rods, the shades are woven together with a decorative warp



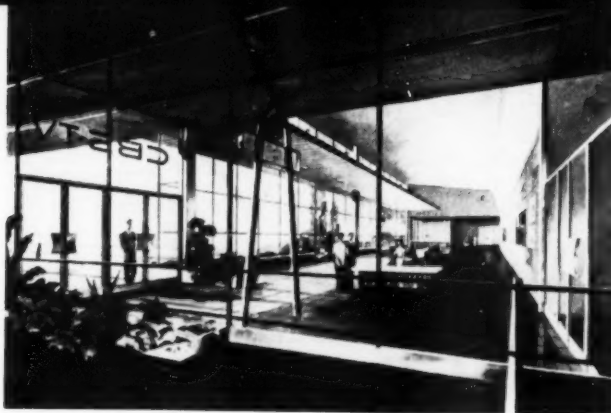
Vertical stripes add interesting effect to shade used on liner S. S. United States

design and are finished with an 11/16-in. aluminum bottom rail. The shades are mounted on springless metal rollers, are raised and lowered by matching cords, and are held in place by an aluminum knob on the side of the window. The painted finish is reported to be fireproof and impervious to the elements. This new type of window covering should be well-suited to hotels, dormitories, restaurants, schools, offices, showrooms, etc. The Columbia Mills, Inc., 101 Park Ave., New York 17, N. Y.

Low-Cost Clay Tile

Robinson Terrace Tile, a vitrified clay tile suitable for both interior and exterior applications, is reported to be low in initial cost and both easy and inexpensive to install. The underside of each tile is grooved to grip mortar or soil, and the top is left unglazed to provide sure footing. The tiles come in natural fired clay colors which differ slightly in shade. Three sizes are available, 9 by 9 in., 9 by 12 in. and 9 by 18 in. Robinson Clay Products Co., Akron 9, Ohio.

(Continued on page 262)

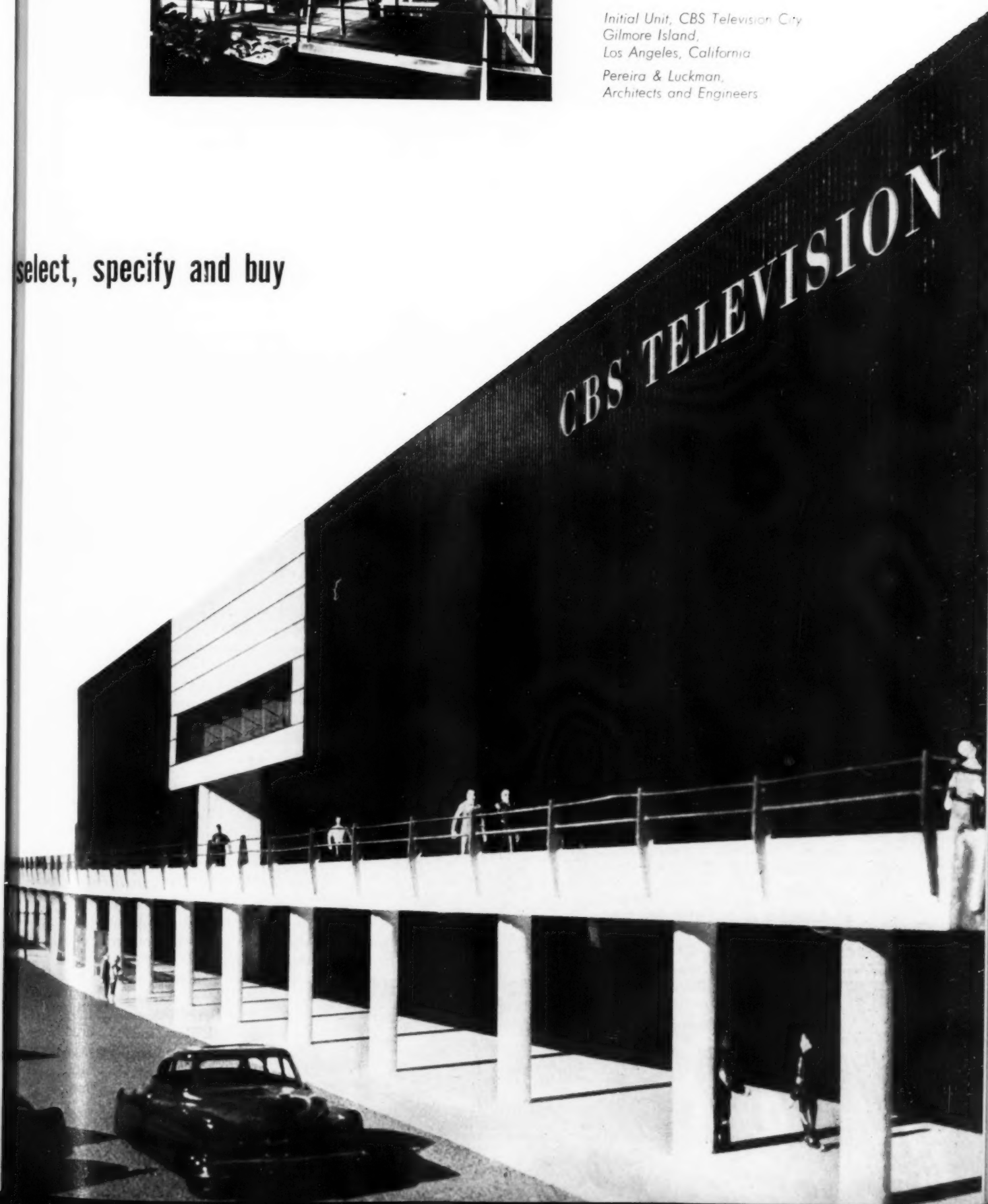


View of
lobby interior,
CBS Television City

Initial Unit, CBS Television City
Gilmore Island,
Los Angeles, California

Pereira & Luckman,
Architects and Engineers

select, specify and buy



SLASH Fastening Costs in Steel and Concrete with New **Ramset** JOBMASTER

10 STAR VALUES increase
ease, speed, utility and economy
of proved RAMSET SYSTEM

Faster loading, one-hand operation with trigger action, hairline accuracy controls, shorter, more compact design and other important features make the new RAMSET JOBMASTER the unmatched tool for high-speed, low-cost, effortless fastening into steel, concrete and other approved materials.

On-the-job experience (not stop-watch laboratory figures) shows less than a minute per fastener from start to finish—faster on continuous work. Most jobs prove dollar savings up to 75%, time savings up to 90%. For almost any kind of construction fastenings, nothing sets like RAMSET!

Tru-Set Fasteners hit the spot

Guided by the exclusive, elasticized Red-Tip Pilot, Tru-Set Fasteners go straight to the work—penetrate and hold tightly at the exact spot designated. With 54 sizes and types of Tru-Set drive pins and threaded studs, you can select just the one you need for any specific job.

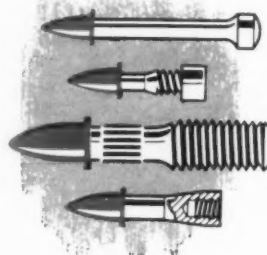
For new ease, new speed, new utility, new economy, ask your dealer today to demonstrate RAMSET JOBMASTER and Tru-Set Fasteners. Or, write us for details.

Ramset Fasteners, Inc.

Ramset Division, Olin Industries, Inc.

12117 BERA ROAD • CLEVELAND 11, OHIO

Product Patent No. 2470117. Other Patents Pending.



Architectural Engineering

PRODUCTS

(Continued from page 258)

Prime Coat For Porous Masonry

Developed primarily for use with lightweight aggregate concrete block surfaces, *Medusa Ruf-Seal* cement paint reportedly fills pores and voids in porous masonry, makes it easier to apply succeeding finish coats and helps to prevent color variations caused by variable high degrees of porosity and absorption of such surfaces. The paint meets government specification TT-P21 Type II, Class B. It is mixed with water and can be applied with a scrub brush. For best results it should be cured with a fine fog spray of water. The product is packaged in 25 lb containers and is available only in white. Medusa Portland Cement Co., 1000 Midland Bldg., Cleveland 15, Ohio.

Colored Fluorescent Tubes Used in New Lighting Unit

Spectro-Lite, a new lighting unit which uses colored fluorescent tubes in a patented fixture, reportedly produces a light effect equivalent to daylight. Measuring 6000 K on the spectra meter, the same color temperature as natural daylight, the light is produced by blending the primary colors of the spectrum. The unit employs cove curvatures and patented reflecting surfaces to achieve this blending.

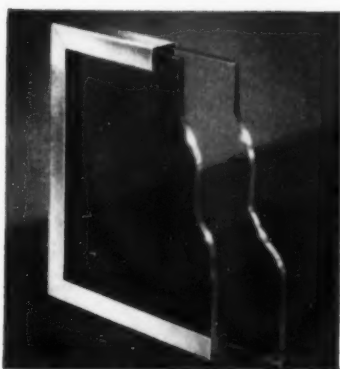
The manufacturer particularly recommends the unit as a light source in manufacturing plants, offices, schools, libraries, etc. John P. Filbert Co., Inc., 2007 South Vermont Ave., Los Angeles 7, Calif.

New Metal Used in Storm Doors

Rigid-Tex Metals are reported to produce a storm door which will not sag or warp and be practically impervious to fingerprints, scratches, dents and scuffs. Requiring no painting, polishing or maintenance of any kind, the metal needs only to be wiped occasionally with a damp cloth. Doors manufactured with this revolutionary metal may be fitted with interchangeable glass and screen panels. Rigidized Metals Corp., 685-P Ohio St., Buffalo 3, N. Y.

(Continued on page 260)

How Pittsburgh Glass serves contemporary architecture



FOR THE VETERANS MEMORIAL BUILDING, Detroit, Michigan, Pittsburgh products were selected as a part of the basic design scheme. Included in these products are 6,589 square feet of Polished Plate Glass, 326 square feet of Mirrors, twenty-four Herculite Doors, Pittco De Luxe Metal. Illustrated here is the commodious and comfortable lounge, with its large expanse of Plate Glass giving a commanding view of the outside surroundings. Architects: Harley, Ellington and Day, Inc., Detroit, Michigan.

SOLEX-TWINDOW gives all the advantages of Pittsburgh's Twindow—"the window with built-in insulation"—plus the heat-absorbing, glare-reducing properties of Sorex—"the best glass under the sun!" This cutaway shows the construction of such a unit. The outer pane is Sorex—the inner light is clear Plate Glass. Between them is a sealed-in air space. A stainless steel frame protects the seal and glass edges; makes handling safe and easy.

Design it better with **Pittsburgh Glass**



Your Sweet's Catalog File contains detailed information on all Pittsburgh Plate Glass Company products . . . Sections 7a, 13e, 15, 16b, 21.

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

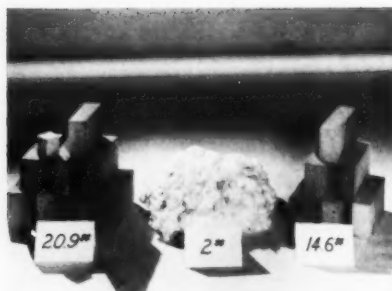
PITTSBURGH PLATE GLASS COMPANY

PRODUCTS

(Continued from page 262)

Manmade Ceramic Fiber Resists High Temperatures

Fibrefax ceramic fiber, a recent development from the Carborundum Company, is a vitreous aluminum silicate presently available in a fluffy, white mass made up of random arrangements of fine fibers. The new material resists temperatures sufficient to melt cast iron.



New ceramic fiber (center in photo) weighs only 2 lb per cu ft



337' x 48' slip-form deck used to pour addition to Farm Bureau grain terminal at Canal Winchester, Ohio. Once a minute, 192 screw jacks were turned to raise entire forms 15/100". Carts, served from central hopper, distributed concrete to the continuously rising forms.

How to pour a 1,200,000 bushel basket — in one piece

By a continuous pour of 6,000 cu. yds. of ready-mixed concrete, into slip-forms raised on jackrods at the rate of .15" every minute, this elevator addition was completed in 168½ hours. The 24 bins, each 20' in diameter and 127' high, and interstitial walls, covering a 337' x 48' area, form one monolithic structure without joint or seam.

Because concrete design envisions a homogeneous material, of numerous elements completely mixed, the ready-mixed concrete industry certifies by Rating Plate those truck mixers and agitators which have the proper design, capacity, drum speed, mixing action and water control necessary to produce a homogeneous concrete of uniform strength.



Look for this Badge of Dependability on Truck Mixers: You have a right to insist on this Rating Plate on any truck mixer that serves your jobs. It is available to all who comply with the quality standards established by the National Ready Mixed Concrete Association and the Truck Mixer Manufacturers Bureau.

These member manufacturers comply with Bureau standards:

BLAW-KNOX DIVISION
Pittsburgh, Pa.
CHAIN BELT COMPANY
Milwaukee, Wis.

CONCRETE TRANSPORT MIXER CO.
St. Louis, Mo.
THE JAEGER MACHINE COMPANY
Columbus, Ohio

THE T. L. SMITH COMPANY
Milwaukee, Wis.
WORTHINGTON PUMP & MACHINERY CORP.
Dunellen, N.J.

and is reported to have a degree of fineness which permits its use as a superfilter or as a base for entirely new types of insulation and fireproof and electrical papers. It is also described as resilient, light-weight and resistant to corrosion by most chemicals. Raw materials of the product are aluminum oxide and sand, which are melted in an electric furnace and subjected to air blasts. No critical materials are required in production equipment.

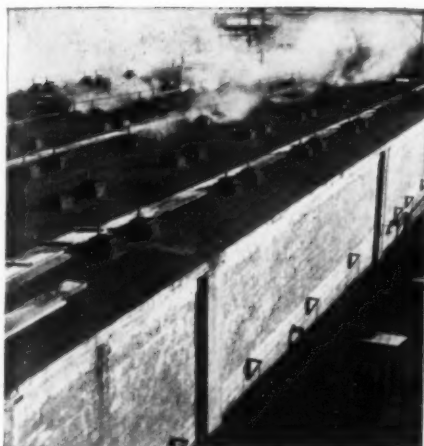
Actual and potential applications of the fiber cover a wide range, according to the manufacturer. At the present time, it is being employed as high-temperature insulation in combustion and exhaust systems of jet engines; it is being studied by the Office of Naval Research for use in highly specialized papers; it can replace or be combined with asbestos in many applications; it can be used for filtration and for thermal and acoustical insulation in panels.

Inertness of the fiber is reported to permit cleaning and re-use of the material without loss of filtering efficiency. At the present, the product is not available in spun, woven or filament form, although mixtures with other fibers permits carding and spinning. It is expected that other forms may be commercially practicable in the future. Carborundum Co., Niagara Falls, N. Y.

Rubber Membrane Sheeting Reinforced with Glass Fibers

Nerra-Clad, a roll sheeting for waterproofing and corrosion protection, is composed of a ply of woven glass fiber sandwiched between plies of synthetic rubber, and can reportedly be installed in a single operation. Unlike organic fibers, the glass fibers are not affected by mildew or moisture, and the synthetic rubber in which they are imbedded is said to provide an impermeable barrier, even under hydrostatic pressure. The rubber compound, according to the manufacturer, will not lose its impermeability either by becoming embrittled or cracked at freezing or by softening or melting under summer heat. It is further reported that the flexibility and resiliency of the material enables it to be wrapped easily and snugly around every contour of structural steel, concrete, masonry or piping. Since it is a complete membrane in itself, the sheeting can be applied "dry" directly on spandrels. It can also be placed in direct contact with steel beams. Rubber & Plastics Compound Co., Inc., 30 Rockefeller Plaza, New York 20, N. Y.

(Continued on page 270)



To control the rate of drying, moisture is actually added to air inside these modern kilns.



Sample pieces of wood in kilns are carefully weighed to check moisture content.



Cooling shed at discharge end of kiln battery. Lumber is held here to equalize at normal use temperatures.

Controlled Kiln-Drying...the Key to Lasting Satisfaction

Whenever a construction job is started, the owner will be greatly comforted by positive answers to these questions: Will the lumber hold its size and shape after nailing? Will it have maximum strength, hardness, and stiffness? Will it age handsomely, and not develop stains? Will it take and hold paint?

These are all important factors, if the owner is to enjoy lasting satisfaction from his building. And each one of these factors is closely related to the drying of lumber. Consequently, scientific drying is a controlled step in the manufacture of Weyerhaeuser 4-Square Lumber.

At Weyerhaeuser mills lumber is dried in large, ultra-modern kilns. This method, under accurate control, saves much time, and results in proper and uniform dryness. It also makes possible the lower moisture content essential for many uses of lumber.

Lumber as cut from the log contains a great deal of native moisture. When this is removed the wood cells shrink. Weyerhaeuser controls this shrinkage process through precise kiln seasoning. Weyerhaeuser kiln-drying is regulated with great care and technical skill in

order to resist checking, honeycombing, warping and twisting... thus providing, through means of this important phase of manufacture, lumber products of greater utility.

Look for the Weyerhaeuser 4-Square brand name to be certain that properly seasoned lumber is used in the construction of your building.

One of a series of advertisements defining the important factors contributing to the production of good lumber.



The Everett, Washington Mill. At mills located on the West Coast and Inland Empire, Weyerhaeuser 4-Square Lumber is produced in a range of products from Douglas Fir, Idaho White Pine, Ponderosa Pine, West Coast Hemlock, Western Red Cedar and related species.

Weyerhaeuser 4-Square Lumber and Services

WEYERHAEUSER SALES COMPANY • ST. PAUL 1, MINNESOTA

PRODUCTS

(Continued from page 266)

Carpet-Joining Method

Utilizing a fabric and paper tape with built-in metal grips and a rubber-based adhesive, a new method of joining carpets is said to eliminate tacking and sewing. The carpet is seamed while lying face upward, and this reportedly facilitates pattern matching in figured carpeting.



Left: adhesive is applied to tape; right: two sections are fitted together with kicking tool

Distinctive

effects with

CABOT'S stain wax



Arch.: Miss Edla Muir, Los Angeles, Cal.



Eichler Homes, Palo Alto, Cal.
Arch.: F. E. Emmons and A. Q. Jones.

Cabot's Stain Wax combines a beautiful penetrating stain with a wear-resistant wax . . . enhances the texture and design of wood panelling . . . produces a soft, lustrous finish in one application.

CONTEMPORARY COLORS

Cabot's Stain Wax comes in a variety of interesting blond shades — Glacier Blue, Seashore Gray, Ivory, White and Natural. Also the traditional darker shades — Maple, Mahogany, Walnut, Redwood and the new popular Vermont Pine. For unusual effects, White and Natural can be tinted with colors in oil.

Write Today for Cabot's Stain Wax Color Card and complete information.

Samuel Cabot Inc., 1029 Oliver Bldg., Boston 9, Mass.

CABOT'S STAIN WAX

The 4-in. wide tape is placed on the floor at the point where the seam is to be made. After the adhesive is applied to the tape, one section of the carpet is laid over the tape to its mid-point. With a kicking tool, the second section of the carpet is fitted tightly against the first section. Pressure is then applied along the seam, causing the needle-like grips in the tape to penetrate the carpet backing. The carpet can be stretched into place 30 to 60 minutes after the seam has been made.

The tape is being marketed under the trade name, *Kwik-Grip*; the adhesive under the trade name, *Rug Sealz*. United States Rubber Co., Naugatuck Chemical Division, Naugatuck, Conn.

Slip-on Pipe Fittings

Made of corrosion-resistant aluminum alloy, *Nu-Rail* slip-on fittings eliminate threading or welding and reportedly save cutting pipe. Compared to threaded pipe and fittings, they are claimed to save as much as 80 per cent on labor and 30 per cent on overall cost, according to the manufacturer. There are five basic fittings plus a floor and wall flange and a drive fit and cap. These may be used individually or in combination and can be combined into almost every kind of fitting required. They fit standard pipe in sizes from $\frac{3}{4}$ to 2 in. Each section of every fitting is reportedly locked with two knurled cup point vibration-proof hollow set screws which will not work loose. Load carrying ability is limited only by the pipe used, since there is no weakening resulting from threading. The fittings have been used in construction of all types of railings, pipe enclosures, racks, shelving, scaffolding and similar assemblies, and are said to have almost 100 per cent salvage value when used on temporary structures. Hollaender Mfg. Co., 3841 Spring Grove Ave., Cincinnati 23, Ohio.

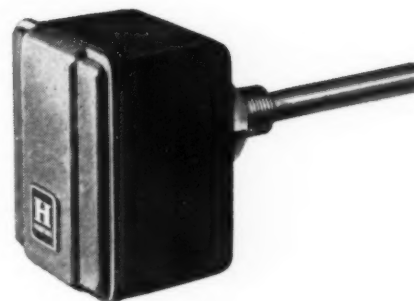
(Continued on page 274)

temperature today!



Electronic Insertion Thermostat

Honeywell's versatile Electronic *Insertion* Thermostat performs many functions in Electronic Air Conditioning Control Systems—from that of an outdoor master thermostat to that of low limit control in a discharge air duct or of a submaster thermostat in the water supply to a heating or cooling coil. Adjustments in the central Electronic Control Panel select the specific temperature operating range of the thermostat required for the particular function.

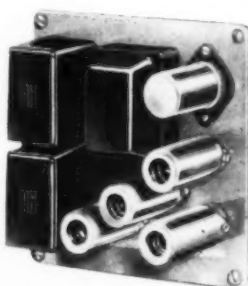


Electronic Flat Plate Relay

The Electronic Relay is the heart—the *magic brain*—of the Electronic Control System!

Incorporated into a suitable panel, it receives and coordinates messages from indoor and outdoor thermostats. Accordingly, it positions motorized dampers and valves, or operates heating or cooling equipment. Many standard types of panels are available, for heating, cooling or Summer-Winter air conditioning systems.

Special panels can be provided for unusual applications.



Electronic Humidity Control

Proven over *one hundred times* more sensitive for controlling humidity than conventional mechanical systems!

Maintains humidity within a fraction of a per cent, or corrects for the slightest change, with no waste or overshoot.

Has no moving parts, and can be used with electric, pneumatic or electronic systems.

It's a complete electronic system that keeps humidity right on the beam—whether for humidifying or *dehumidifying*.



For further information and application data on the five remarkable electronic controls shown here, call your nearest Honeywell office—there are 96, located throughout the country. Or else fill out and send coupon at right.

MINNEAPOLIS Honeywell



First in Controls

MINNEAPOLIS-HONEYWELL REGULATOR CO.
Dept. AR-10-207, Minneapolis 8, Minn.

Gentlemen: Please send me information on the Electronic Controls I have check-marked here:

- ☐ Electronic Weathercaster
- ☐ Electronic Air Conditioning Control System
- ☐ Electronic Humidity Control System

Name _____

Firm Name _____

Address _____

City _____ Zone _____ State _____

PRODUCTS

(Continued from page 270)

New Furniture Line

Several new designs by Paul McCobb have been assembled to form the *Irwin Collection*. Including furniture for dining, living and bedrooms, the group consists of both upholstered and case pieces along with occasional tables, tables for dining, dining room chairs covered either in leather or fabrics and

Set against background of gray and white, bedroom group has air of elegance and simplicity

many other items. Mr. McCobb has used mahogany exclusively and has introduced white vitrolite glass tops on several of his tables. A headboard sized to accommodate twin beds pushed together is available in polished brass combined with upholstery fabric, or in wood. An attractive breakfront is featured in the collection, done in brass and mahogany. Containing glass shelves, closed



cupboard space and ample drawer space, it has been designed in two units—one to fit on top of the other. The distributor of the line is B. G. Mesberg National Sales, 201 E. 57th St., New York, N. Y. and the Merchandise Mart, Chicago, Ill.

Lighting Fixtures

Several new collections of lamp designs have recently made their appearance.

• Designs by Gerald Thurston and Gino Sarfatti include both floor and ceiling fixtures. Mr. Thurston's *Traveler* is a unique ceiling fixture which is not only



Traveling overhead fixture adjusts to various positions of dining room table

adjustable in height but also laterally mobile over the length of a traverse rod which is mounted on the ceiling. The shade is natural Finnish aspenslat with a mesh plastic diffuser to eliminate glare. Fixtures are polished brass with a natural finished wooden pull.

Mr. Sarfatti's floor lamps feature mobility and stylized design. *Flying Saucer* has three light sources mounted on a shaft, with a circular fluorescent bulb in one of the shades. *Weeping Willow* has

(Continued on page 274)

ROMANY-TILES
ARE BRASS TILES
Manufactured in England

POINTS OF EXCELLENCE (5)



IMPERVIOUS COLORS

Every ROMANY color is fade-proof, sun-proof, wear-proof. It is an integral part of the tile itself, kiln fired for the life of the tile. Every ROMANY color has been selected to fit the pattern of modern requirements in industrial, commercial and institutional buildings, as well as residences. Beneath the glazed color face with its cushion edge is the buff body which insures the wearing quality for which ROMANY is noted. Other features include water, stain and fire resistance, and unsurpassed sanitary advantages.

Every Architect should have our Sample Tile Chart No. 6. It's free.

UNITED STATES QUARRY TILE CO

Member: Tile Council of America and Producers' Council, Inc.

217-H FOURTH STREET, N.E. CANTON 2, OHIO



Conrad Hilton Hotel, Chicago. Famed hotel, formerly The Stevens, employed Zonolite Acoustical Plastic throughout in remodeling the Park Row Restaurant.



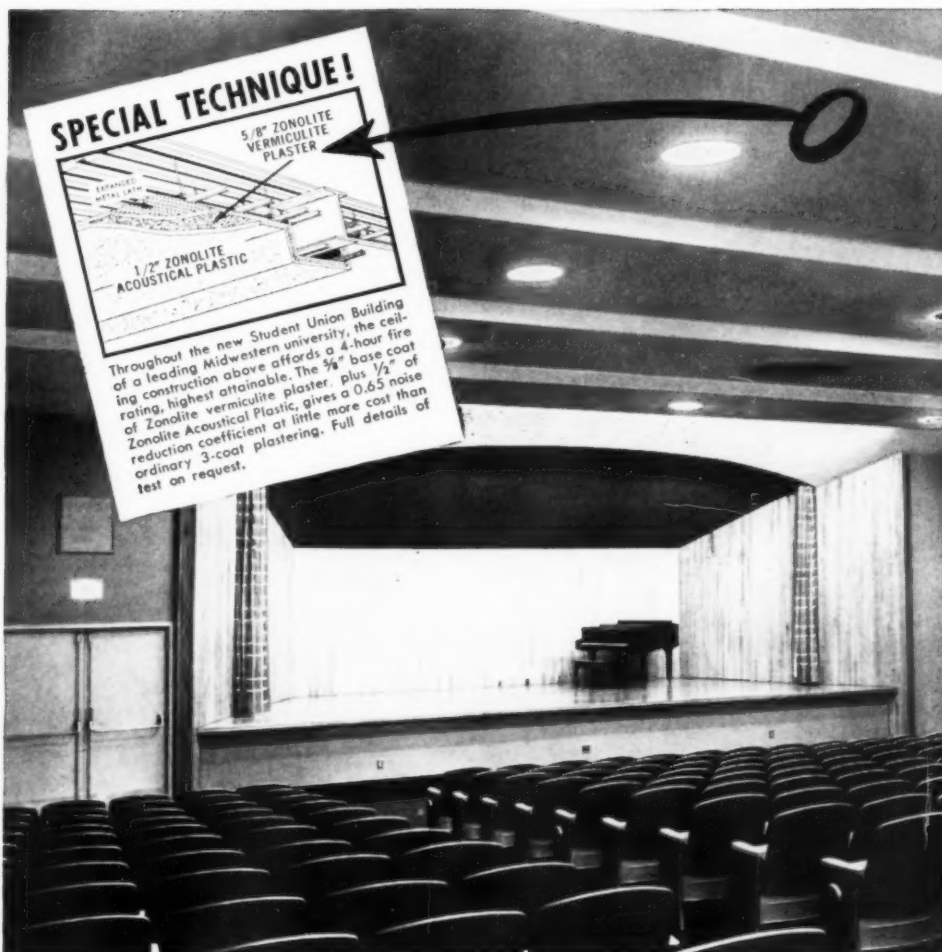
Northwestern Mutual Fire Assn. Building, Los Angeles. Leading architect, Richard Neutra, chose Zonolite Acoustical Plastic for noise reduction.



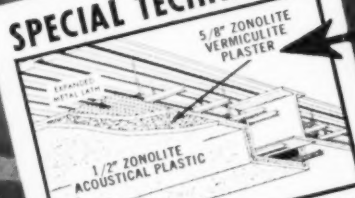
Parkview Grade School, New Bedford, Indiana. Zonolite Acoustical Plastic used throughout corridors, classrooms and auditorium.



Queen's Bowling Alleys, Chicago. Zonolite Acoustical Plastic used for sound-deadening, fire protection and attractiveness.



SPECIAL TECHNIQUE!



Throughout the new Student Union Building of a leading Midwestern university, the ceiling construction above affords a 4-hour fire rating, highest attainable. The $\frac{5}{8}$ " base coat of Zonolite vermiculite plaster, plus $\frac{1}{2}$ " of Zonolite Acoustical Plastic, gives a 0.65 noise reduction coefficient at little more cost than ordinary 3-coat plastering. Full details of test on request.

You're Looking at a Few Acoustical Jobs Where ZONOLITE® ACOUSTICAL PLASTIC CUT COSTS, SAVED TIME, ADDED BEAUTY

The surest way to an attractive, highly efficient acoustical ceiling—with greatest fire protection—is through the use of Zonolite Acoustical Plastic. With a noise-reduction coefficient of 0.65, Zonolite Acoustical Plastic lends any room a rich, lasting beauty—may be varied in texture, can be easily decorated or left in its pleasing natural color.

Any clean, firm, water resistant surface—even undersides of concrete ceilings—forms a suitable base for Zonolite Acoustical Plastic. And no other acous-

tical material offers greater fire protection, by actual test. Quickly and easily applied, either by hand or through plaster pumping equipment, Zonolite is generally the lowest-cost type of acoustical ceiling.

Before starting on your next job, get the full facts about Zonolite. Mail coupon for free booklet and complete information about cost-cutting, firesafe Zonolite Acoustical Plastic, including details of 4-hour ceiling construction. Sent to you free—without obligation.

ZONOLITE COMPANY

135 S. La Salle Street
Chicago 3, Illinois
Member of Vermiculite
Institute



MAIL COUPON TODAY FOR FREE BOOKLET!

Zonolite Company, 135 S. La Salle St., Dept. AR-102; Chicago 3, Ill.

Gentlemen:

☐ Please send descriptive booklet on Zonolite Acoustical Plastic, including information on 4-hour acoustical ceiling.

NAME.....

FIRM.....

ADDRESS.....

CITY.....ZONE.....STATE.....

☐ Architect ☐ Builder ☐ Student ☐

PRODUCTS

(Continued from page 271)

three slim brass shafts tapering up from a flat white marble disc base. *Pendulum* has a white marble base, brass shaft and a white bucket shade. A pendulum hung on the cord moves the direction of the light to desired position. Lightolier, Inc., 11 E. 36th St., New York, N. Y.

- Glazed ceramic bases, ranging in shape from rough to smooth surfaced simplified urns, are used in the designs of Freda Diamond. Texture and color play an important role in creating a group of table lamps that fit in with almost any period. *Mayan* is a melon-shaped urn done in an avocado green with stone antique, topped with an off-white shade with a basket-like texture. *Casbah* has a brick base with sunken grooves of antiqued stone effect, topped by a hand painted light brown and white textured shade. Daison Mfg. Co., 1327 Fairmount Ave., Philadelphia 23, Pa.

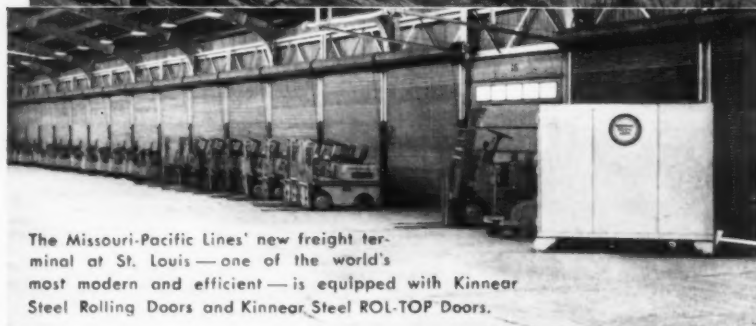
- A collection of lamps from manufacturers across the country was recently exhibited by the Lamp and Shade Institute of America. Included in the showing were portable table lamps, floor lamps and pin-ups, most of the designs being predominantly black and white. Several base materials were shown, such as wrought iron, china, leather, wood, glass, wire and ceramics. Shades included burlap, plastic, rattan and natural fibers. The Lamp and Shade Institute of America, 15 E. 26th St., New York 10, N. Y.

Display Lighting Fixture With Adjustable Sockets

Described as a new development in display lighting, the *Neo-Ray Rolo Strip* is a complete compact and shallow unit with swivel sockets built in. Finger-tip adjustment is provided 90 deg in all directions, through a complete 360 deg circle. The lights are said to stay put at any angle.

The fixture is manufactured in stock lengths of 2, 3, 5 and 8 ft and may be variously combined for any desired overall length. Three series are available; for ordinary installations, for

(Continued on page 282)



The Missouri-Pacific Lines' new freight terminal at St. Louis—one of the world's most modern and efficient—is equipped with Kinnear Steel Rolling Doors and Kinnear Steel ROL-TOP Doors.

Where doors get their toughest assignments...

KINNEAR Rolling Doors prove their extra value for every need

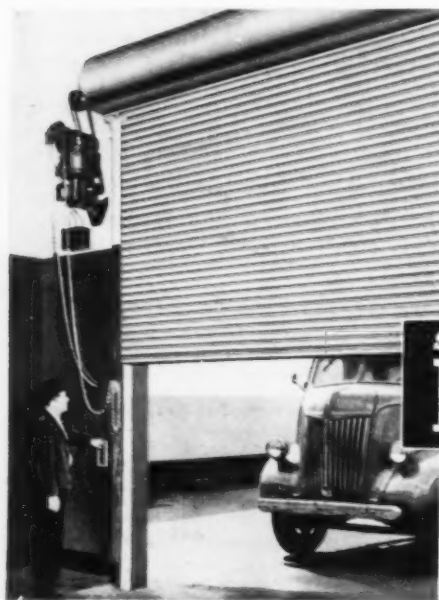
The advantages of Kinnear Rolling Doors for all types of buildings are proved by their performance in big installations like this—where doors are the very life-line of efficiency.

The coiling upward action of Kinnear Rolling Doors makes all floor and wall space around doorways fully usable at all times. Freight or materials can be stacked close to the door curtain, inside and outside the building, without blocking door action.

Opening completely out of the way above the lintel, the doors stay out of reach of damage by wind or vehicles. The interlocking steel-slat construction—originated by Kinnear—provides a rugged, all-

metal curtain that assures long service and low maintenance, plus extra protection against fire, theft, and the elements.

Kinnear Rolling Doors are tailored to fit any opening, in old or new buildings. Kinnear Motor Operators are also available, for push-button control. Write today for complete information.



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Daniel, Mann, Johnson and Mendenhall, Architects and Engineers

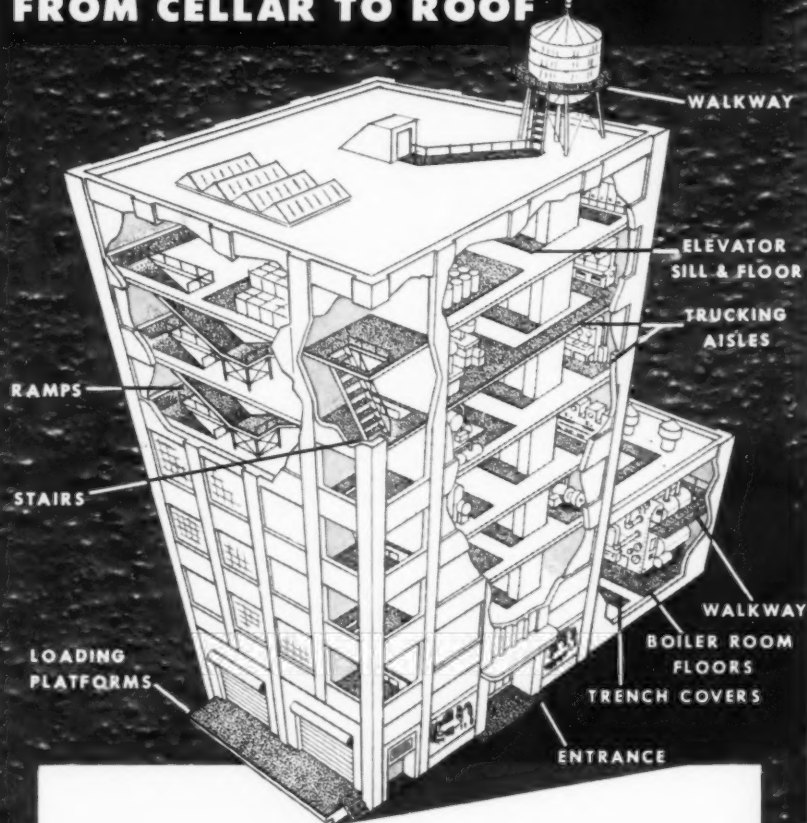
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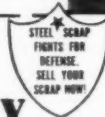
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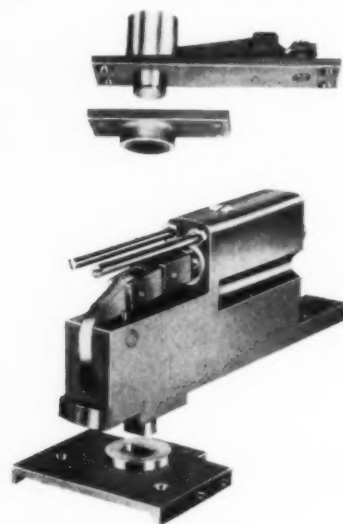
PRODUCTS

(Continued from page 278)

corner mounting and for installations where light should be shielded. Low installation cost is said to be afforded, since a fixture with eight sockets takes no longer to install than a single ordinary socket. Neo-Ray Products, Inc., 315 E. 22nd St., New York 10, N. Y.

Concealed Door Control

Available in either double or single-acting models, a completely concealed Ellison checking pivot is adaptable to either interior or exterior use. The control eliminates protruding door checks, check arms, hold-open brackets or hinges. Since the floor plate is set into a



Bronze door control can be completely concealed within door

1/2 in. recess in the saddle, it is not necessary to cut or dig below the finished floor. The control has two easily accessible speed adjustments and permits the door to open a full 100 deg. The entire mechanism is said to weigh less than 16 lbs and it is made of solid bronze. A self-centering device is reported to make it impossible for the door to hang off center. Tests of the double acting control are reported to have shown almost no wear and no leakage after the equivalent of five years' average openings and closings. Price is described as low. Ellison Bronze Co., Jamestown, N. Y.

(Continued on page 287)



To keep things **QUIET** Simpson Acoustical Contractors Offer a Complete Service. Call nearest one:

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Stokes Interiors, Inc., Mobile
- ARKANSAS**
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W. T. Roberts Construction Co., Hartford
- DISTRICT OF COLUMBIA**
Kane Acoustical Co., Washington
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Kelley Asbestos Products Co., Sioux City and Des Moines
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Davis-Fetch & Co., Inc., Buffalo, Rochester and Jamestown
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Bost Building Equipment Co., Charlotte
- OKLAHOMA**
Harold C. Parker & Co., Inc., Oklahoma City
Kelley Asbestos Products Co., Tulsa
- OHIO**
The Mid-West Acoustical & Supply Co., Cleveland, Akron, Columbus, Dayton, Springfield and Toledo
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Blue Diamond Company, Dallas
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- UTAH**
Utah Pioneer Corporation, Salt Lake City
- VIRGINIA**
Manson-Smith Co., Inc., Richmond
- WASHINGTON**
Elliott Bay Lumber Co., Seattle
- WISCONSIN**
Building Service, Inc., Milwaukee and Green Bay
- CANADA**
Albion Lumber & Millwork Co., Ltd., Vancouver, B. C.
Hancock Lumber Limited, Edmonton, Alberta

Architectural Engineering

PRODUCTS

(Continued from page 282)

Air Valve For Hot Water Systems

The *Duorent*, an air valve for hot water systems, can reportedly be shifted from manual to automatic venting with finger-tip regulation. The unit incor-



Two valves in one, the unit operates either manually or automatically

porates two valves in one. In manual venting, air escapes directly through a vent at the base. In automatic venting a hollow pin blocks this route, and air escapes up through the pin and out through ports in the upper portion of the valve. After air has been vented, the ports are closed by hygroscopic discs, which swell immediately when contacted by water. A twist of the top half of the valve changes it from manual to automatic. It can be reset in the same manner. Keeney Mfg. Co., Newington, Conn.

Ball Point Pen For India Ink

The *Taubman Black India*, a ball point pen with an India ink cartridge, is reported to afford new convenience to architects, draftsmen and artists by eliminating the need for pen dipping. The instrument has an elongated tip to facilitate its use with a ruler and is said to be smearproof, fadeproof and quick-drying. It also will not corrode, according to the manufacturer. Refills are available. Samuel Taubman & Co., 1 W. 34th St., New York 1, N. Y.

(Continued on page 290)

For Your Files



NEW ELEVATOR DATA FILE

Shows how to select and specify modern passenger elevators

This booklet for architects is the most complete and helpful ever issued on modern hydraulic elevators for passenger service. It covers the following subjects with photographs, drawings and concise information:

- How to eliminate the penthouse in modern buildings
- Elevator Entrances
- Cars and Doors
- Power Units and Controllers
- Electric Control Systems
- Recommendations and Specifications
- Architectural Data for Plans

As this booklet has just been printed, its contents are not available through any other source.

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—Architectural Record is the only magazine that is edited *solely* for architects and engineers;

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—and it is the one magazine whose editorial content is scientifically balanced (with the aid of Dodge Reports) in terms of the known broad interest of active architects and engineers in all types of buildings—both *nonresidential* and *residential*.

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PRODUCTS

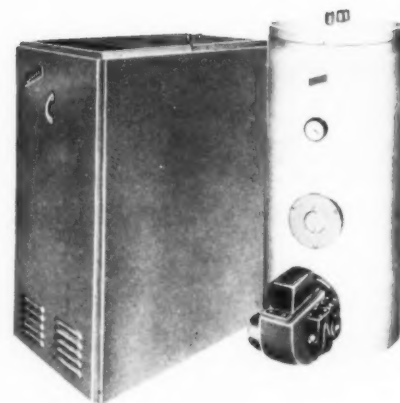
(Continued from page 287)

Compact Tubeless Boilers

Two new *Thrift-Master Econ-O-Models*, complete package units, jacketed and crated ready for piping and burner installation, are reportedly designed and priced especially for small space installation in budget housing. Small overall dimensions enable the boilers to be used in utility rooms, closets, attics and

similar locations in cellarless homes. Features include a seam-welded tubeless boiler made of heavy-gage steel plate, a built-in tankless copper heater, a built-in refractory and a heat economizer. The units are available in capacities of 76,000 and 86,000 Btu per hr. The boilers have heavy-duty Fiberglas in-

Boilers are complete package units, come in "Deluxe Extended Jacket" model (left) and "Round Assembled Jacket" model (right)



as the roof goes UP...
the cost comes



Mail Handling Facilities Building
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sulation and are finished in blue Hammerloid. Both meet ASME code requirements. Round models have a built-on jacket, and extended models are shipped knocked-down. General Heating Products Co., 1207 Hamilton St., Philadelphia 23, Pa.

Low Brightness Classroom Lighting

Practicality of low brightness lighting for classrooms was the subject of research conducted recently by the Mitchell Manufacturing Company in conjunction with architects and school administrators for the recently completed Sheboygan Christian School, Sheboygan, Wis.

Comparative cost estimates were drawn up for alternate lighting schemes employing conventional 40 w semi-direct louvered units, 75 w slimline semi-direct louvered units and 40 w low brightness semi-direct unshielded units. On the basis of comparative totals, it was estimated that in a school of 20 classrooms, low brightness fixture installations would cost about \$1300 less than the manufacturer's conventional units.

Besides the economic consideration, other factors are cited for the desirability of low brightness lighting in schools. Among these are: maximum illumination without the more intense brightness contrasts of other high light output sources; no reflected glare from shiny surfaces located directly below fixtures; installation perpendicular to windows, providing more even illumination in area of front chalk board; elimination of disadvantages of louvered fixtures, such as deterioration and necessity for frequent cleaning. Mitchell Manufacturing Co., 2525 N. Claybourne St., Chicago 14, Ill.

(Continued on page 291)

NEW

CURTIS Woman-Styled KITCHENS

give the housewife what she wants

IN THE HOMES YOU PLAN AND BUILD!



NEW BEAUTY

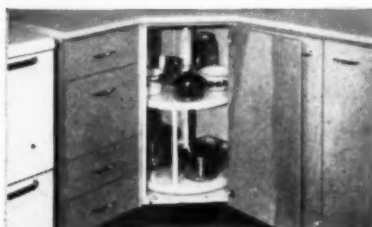
Smart, simple and streamlined, the new Curtis kitchens are available with birch drawer and door fronts—ready for popular natural finishes. Or, if desired, cabinets are shipped finish painted in white, ready for decoration in colors of the owner's choice.



Everybody knows that in the kitchen, woman is the boss. So here's the biggest kitchen news of the year for architects and builders—a *complete new line* of Curtis wood kitchen cabinet units, styled and designed by women—tested by women—judged and approved by women! Thousands of women homemakers helped name the 53 big features which make the new Curtis kitchens so powerful in their appeal to women. Below are just a few of the many new features which give today's women homemakers what they want and need in kitchens.



No waste space—swing shelves in wall and base units utilize entire storage area. Women will love this feature.



Front row storage—spin shelves in wall and floor corner units bring often-used utensils within easy reach.



Extra large metal bread and cake box, with sliding cover. Easy operating, non-sticking drawers, with hardwood runs.



Base "Island" unit with two pass-through drawers, large mixing board, pass-through shelf, space for large utensils.



No "scrambling"—sliding tray—Perma-Brite no-sag sliding wire shelf—deep shelf for roaster, and large utensils.

Full information

on the new Curtis kitchen cabinet units is yours for the asking—mail the coupon.

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Gentlemen:
Please send me booklet on new Curtis woman-styled kitchens.

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Curtis makes a complete line of architectural woodwork and Silentite windows for homes of all types and sizes. Make your next home "all Curtis."



PRODUCTS

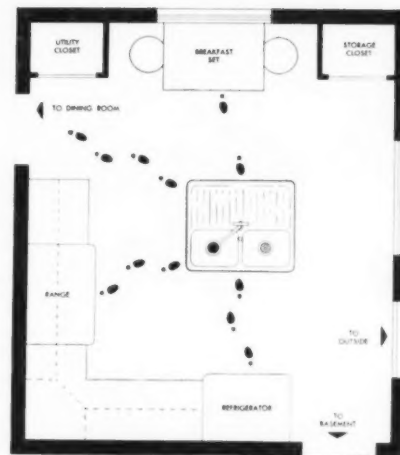
(Continued from page 290)

Kitchen Sink Designed For Center-of-Room Installation

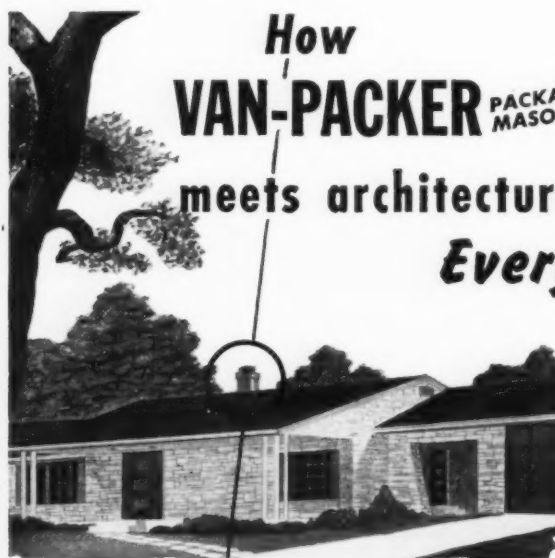
The *Midway*, a new sink developed by American-Standard, is designed for installation in the center of the kitchen instead at the conventional wall location. The sink is intended to save steps for the housewife and make her kitchen chores easier. In addition, it is said to

allow almost unlimited freedom in kitchen planning and layout. Before the new sink was marketed, it was tried out in several test installations, and the manufacturer reports that the tests were successful.

Accessible from all four sides, the rectangular-shaped sink offers a central location for all kinds of kitchen work. The top, 44 in. long by 37½ in. wide, is set on an enameled steel cabinet which provides space for pots, pans, cleaning equipment and a disposer unit on one side, and shelves and drawers for cut-



Above, centrally-located sink is accessible from all sides; below, sink top also serves as convenient work surface



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20' Floor Suspended			10' Ceiling Suspended		
Coal	250,000	B.T.U.	Coal	150,000	B.T.U.
Oil	300,000	PER HOUR	Oil	200,000	PER HOUR
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7" I. D. FLUE**

The Van-Packer Masonry Chimney handles the maximum heater output for most home installations. Van-Packer develops sufficient draft for heating plants designed to serve homes up to 10 rooms in size. Makes possible the central location of the heating plant—where heat runs are shorter and fuel savings greater. This means Van-Packer can contribute to architect planning and actually provide a more flexible house design at lower cost. Van-Packer has been tested and approved under the rigid standards of Underwriters' Laboratories for all fuels. F.H.A. accepted. Double sealed at every joint with acid-proof cement and joint band. Has a chimney wall of insulating vermiculite concrete and a fire-clay tile liner equal in insulating value to 24" of brick or 70" of ordinary concrete.



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lery, bowls, utensils and staple groceries on the other side. Shelves on the inside of the doors hold condiments and soap, and the cabinet has two built-in electrical outlets for appliances. The top has two full-size sink wells and an 816 sq in. drainboard. A specially designed faucet set in the center can be easily reached from any point around the sink and has twin lever handles which can be operated with one hand. A flexible spray attachment reaches to any part of the sink. Drains are controlled by dials on the side of the sink, and a dial can also be used to control a disposer. American Radiator & Standard Sanitary Corp., Pittsburgh 30, Pa.

Wallpaper Custom-Printed From Architects' Design

A new service recently launched by *Wall Trends* permits architects to design wall coverings especially for their clients. The designs are reproduced by silk screen process either on wallpaper or on

(Continued on page 298)

AT HOME

in any style of home

Ponderosa Pine **RANCHO** decorator doors

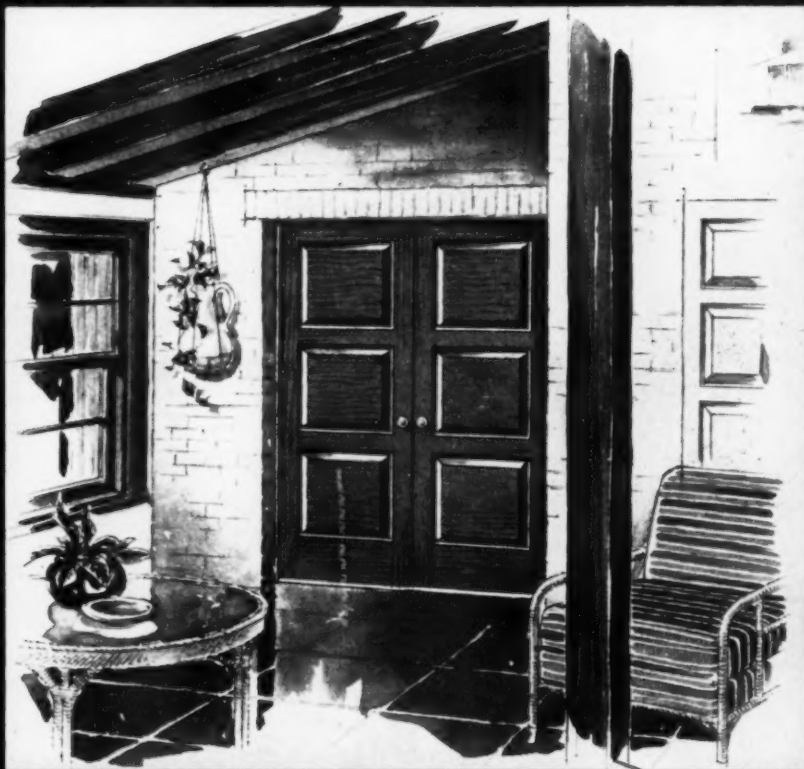
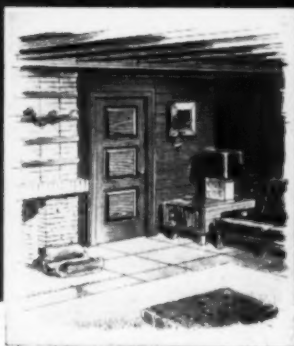
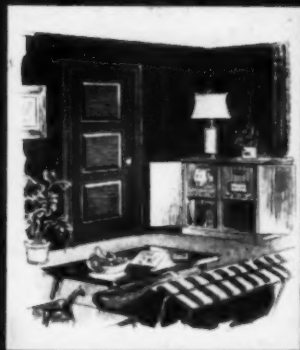


Made of Ponderosa Pine—the wood that combines great beauty with lifetime durability.

Fit any style of home—contemporary, ranch house or traditional. Beautifully proportioned, the three equal panels create an effect of great distinction.

Precision made—clean, sharp detailing—satin-smooth finish.

Exceptionally easy to decorate—Ponderosa Pine surfaces take any stain, paint or enamel, including natural finishes.



Get the whole story of ponderosa pine decorator doors in this big, beautiful, fully illustrated booklet.



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Please reserve a copy of your new book, "Latest Color Style News" for me—and send it to me without cost or obligation.

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PRODUCTS

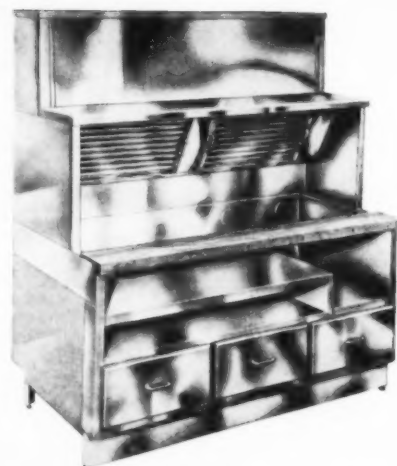
(Continued from page 294)

Stylon wall canvas. The service is expected to be of particular value to architects engaged in commercial or institutional projects, and custom printing is said to be economically practical in quantities as small as 12 single rolls of 36 sq ft each. Only special cost of the service is the manufacture of silk screens, a separate one of which is used for each

color in the design. Among establishments which have used the service thus far are the Loft Candy Stores in New York; Peck and Peck Apparel Stores, New York and Boston; and Linten Restaurants, Philadelphia. If desired, original designs can be furnished by the manufacturer at cost. Wall Trends, Inc., 509 Madison Ave., New York, N. Y.

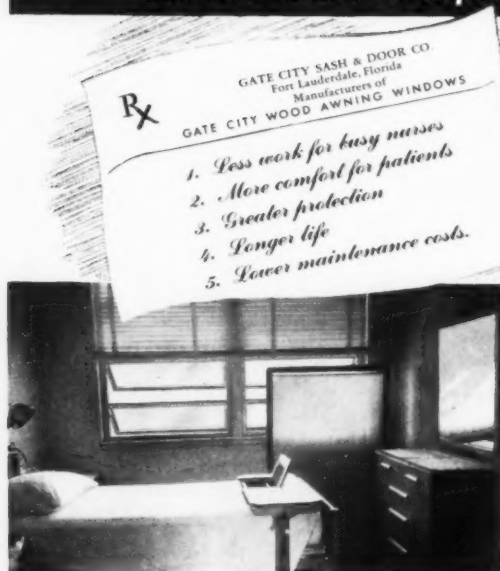
Space-Saving Grill Stands

Two *Space Saver* grill stands have been added to the Liquid Carbonic Cor-



Stainless steel grill stand is available in 5 ft and 6 ft 6 in. lengths

Description of a Prescription for the IDEAL Hospital WINDOW



- Rx**
- GATE CITY SASH & DOOR CO.
Fort Lauderdale, Florida
Manufacturers of
GATE CITY WOOD AWNING WINDOWS
1. Less work for busy nurses
 2. More comfort for patients
 3. Greater protection
 4. Longer life
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Gate City WOOD AWNING WINDOWS Perma-Treated

LESS WORK for busy nurses. The awning sash adjust quickly to any position with one-hand fingertip control.

MORE COMFORT for patients. The tilted sash direct air currents ceilingward...deflect drafts...admit fresh air when it's raining. Weatherstripped for snug tight closure. WOOD is an insulator against cold transmittal and heat loss through the frame.

GREATER PROTECTION. When control handle is detached the sash lock in open position, guarding against anyone falling out or getting in. The tilted sash shed rain to protect interior walls and furnishings.

LONGER LIFE and lower maintenance costs because all parts are preservative-treated for resistance to rot, rust, termites, decay, corrosion and warping.

Refer to Sweet's File,
17c-GA

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Complete details and specifications on request
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poration's standard line of soda fountain and luncheonette equipment. Design of the units provides either straight or offset top for deep-fat friers. Venting may be up-draft, down-draft or straight out. A wide, removable, laminated cutting board is said to afford more-than-average unobstructed working space, and storage facilities include a top shelf, a stainless steel lower shelf and self-closing bread drawers. Standard depth of the units is reported to permit alignment with other equipment, eliminating exposed ends and projections. Available in 5 ft and 6 ft 6 in. lengths. Liquid Carbonic Corp., 3100 So. Kedzie Ave., Chicago 23, Ill.

Felt Mounting For Machinery

Installation of heavy machinery without the necessity for drilling floors or using bolts or lag screws is reportedly made possible by *Unisorb*, a felt mounting which is secured to both machines and floors with a plastic cement. The special cement is said to have a minimum holding strength of 5000 lb per sq ft. Installation is speedier than conventional mounting procedures, according to the manufacturer, and if so requested, the manufacturer will pre-cut and pre-shape the pads to fit machine feet. Moving and relocation of machines is also reported to be simplified, since the cement bond can be softened with carbon tetrachloride, and the pads removed from machine and floor. A further important feature of the product cited by the manufacturer is the elimination of from 60 to 85 per cent of all transmitted machine vibration and noise, resulting in longer life for machines and improved working conditions. The Felters Company, 210 N. South St., Boston 11, Mass.

TONCAN IRON VENTILATING DUCTS

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after 30 years hotel service



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30 years! That's not surprising when the sheet metal used is Toncan Copper Molybdenum Iron. This alloy iron *consistently outlasts other ferrous metals in its price class*—because it stubbornly resists rust.

Toncan Iron is made to give long, trouble-free, low-cost service in all types of sheet metal work. Its basic ingredient is highly-refined open hearth iron. To this is added copper—*twice as much as in copper-bearing steels or irons*. Then molybdenum is added—just the right amount to bring out the full effect of this double dose of copper.

Thus, the high rust-resistance of Toncan Iron is not merely a surface quality. It goes all the way through the metal—and is unaffected by cutting, punching, forming, welding or other fabrication.

Best of all, the cost of this alloy iron is remarkably low—especially in cost per year of trouble-free service. You'll find more about it in Sweet's File . . . and in interesting literature which we have prepared for you. Write us.

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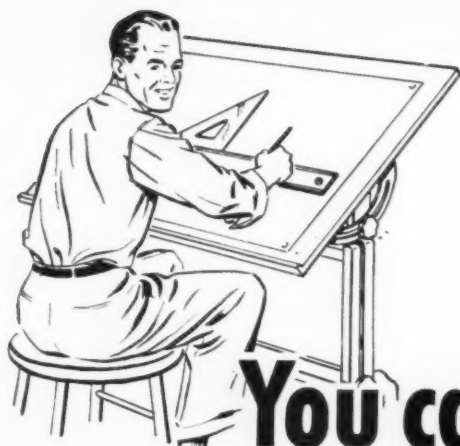


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HIGHEST RUST-RESISTANCE OF ALL
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— for ducts, gutters, conductor pipes, roofing, siding, tanks, ventilators, skylights, hoods and other sheet metal applications requiring rust-resistance — and for corrugated metal drainage products.



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W. D. ALLEN Manufacturing Co.
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Architectural Engineering

LITERATURE

(Continued from page 234)

Wardrobes for Schools

EMCO Wardrobes. Brochure describes the manufacturer's complete line of wardrobes, including Spacemaster Receding types and Center Pivoted types. Photographs of various models are included and specifications are given for both receding and pivot models. General information, construction details and optional equipment are listed. 4 pp., illus. Equipment Manufacturing Co., 1208-10 E. Ninth St., Kansas City 6, Mo.*

Housing Research Construction Aids

(1) *Plumbing Fixture Arrangement, Construction Aid 1*; (2) *Roof Gutters, Construction Aid 2*; (3) *House and Site United, Construction Aid 3*. These three pamphlets are the first in a series published by the Division of Housing Research of the Housing and Home Finance Agency, and are intended to serve as guides for specific phases of planning, design and construction where conservation of critical materials can be effected. They include both time-tested and new ideas. Recommendations are illustrated and accompanied by specifications. Some of the recommendations are based upon research conducted by HIFA. 18 pp., 11 pp., 27 pp., all illus. Price: Nos. 1 and 3, 15 cents; No. 2, 10 cents. Available from Superintendent of Documents, U. S. Govt. Printing Office, Washington 25, D. C.

Sandwich Construction

Symposium on Structural Sandwich Constructions. Technical bulletin is comprised of eight papers and discussions presented at the 1951 annual meeting of the American Society for Testing Materials. Included in the bulletin are numerous charts and graphs and photographs. Detailed drawings point out examples of application in large buildings, houses, aircraft, etc. The booklet is bound in heavy paper covering. 120 pp., illus. \$2.00. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.

(Continued on page 306)

NEW SINAI HOSPITAL

DETROIT, MICHIGAN



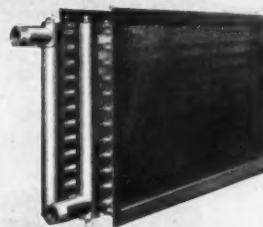
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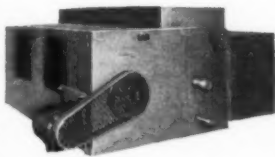


Typical Chilled Water Coil
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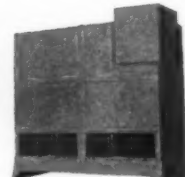
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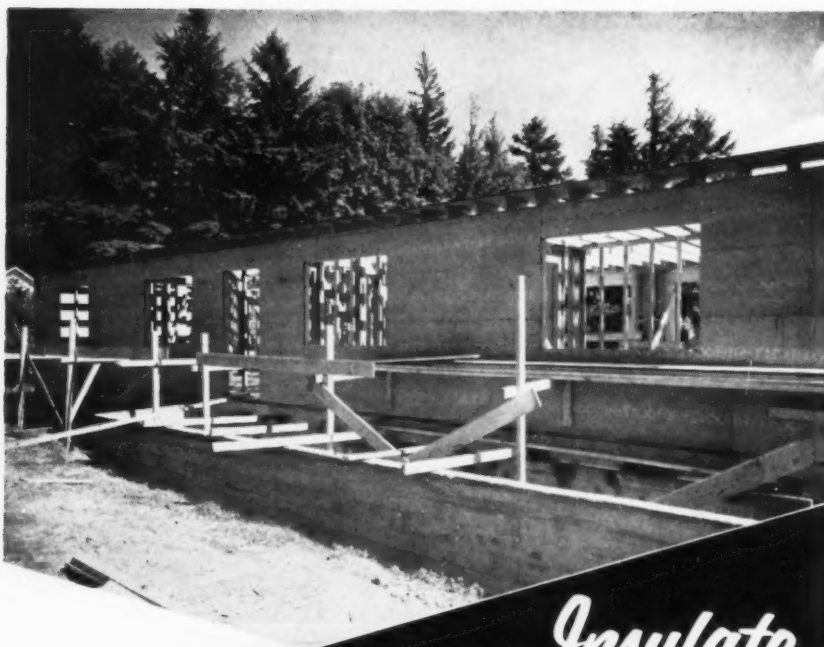


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Architectural Engineering

LITERATURE

(Continued from page 302)

Group Washroom Equipment

Bradley Group Washing Equipment, Catalog 5204. Booklet presents a detailed description of the latest group washing equipment, including washfountains, soap dispensers, multi-stall showers and drinking fountains. Specifications, detailed drawings and photographs of equipment in actual use are included. Capacities for washfountains and showers are included, along with water consumption for both. 24 pp., illus. Bradley Washfountain Co., 2203 W. Michigan St., Milwaukee 1, Wis.*

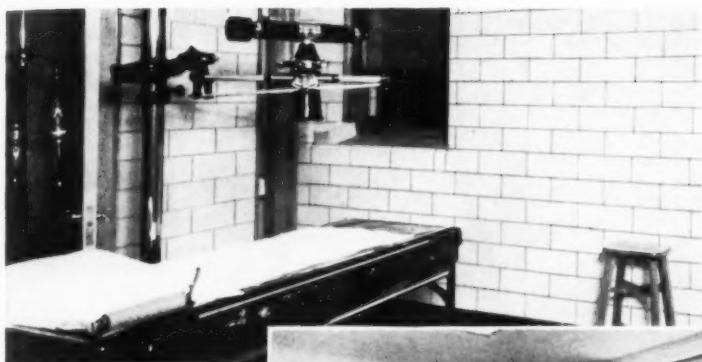
Daylighting with Glass Blocks

How to Make the Most of Daylight. Booklet contains a collection of folders and surveys together with reprints of previously published technical articles. Illustrating how schools may be efficiently daylighted with glass blocks, folders include photographs, detailed drawings, plot and floor plans of school buildings and other illumination data. Variations of the Vision-Lighting Plan indicate average brightness from north, south and west elevations for morning, midday and afternoon conditions. Reprints in the booklet include, "How to Compute Illumination Distribution," "A Simple Daylighting Survey Technique," "The Little Glass Schoolhouse," "Glass Block Fenestration and the Interreflection Method," and "Daylight Illumination on Interiors Fenestrated with Glass Blocks." 60 pp., illus. Pittsburgh Corning Corp., 307 Fourth Ave., Pittsburgh 22, Pa.*

Roofing and Siding

(1) *Specifications for Carey Built-Up Roofs;* (2) *Careystone Corrugated Asbestos-Cement Roofing and Siding.* First booklet has index designed to assist in selecting the proper type of built-up roofing to meet existing conditions. A list of general requirements of built-up roofing specifications is given preliminary to the main part of the book, which is divided into eight sections, each dealing with different roofing materials. Some of these materials include asphalt and asphalt rag felt, coal tar pitch and

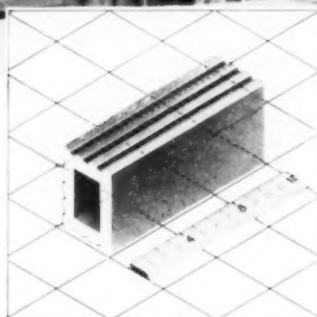
(Continued on page 310)



(Above) X-ray Room with walls of Natco Glazed Structural Facing Tile in St. Francis Hospital, Pittsburgh, Pennsylvania.

(At Right) Interior view showing Natco Structural Glazed Vitritile walls in St. Vincent's Hospital, Toledo, Ohio. Maguolo & Quick, Architects; A. Bentley & Son, Contractors.

(Below) Natco Glazed Structural Facing Tile used in the Mayo Hospital, Rochester, Minnesota. O'Meara and Hills, Architects; McGough Brothers, Contractors.



BRIGHT WALLS OF HEALTH- STIMULATING CLEANLINESS

All the requirements of interior hospital walls—cleanliness, germ-resistance, moisture proof, fire-safety, cheerful brightness . . . all of these are met with walls constructed of Natco Glazed Structural Facing Tile.

First cost is last cost . . . because Natco Glazed Structural Facing Tile needs no maintenance except occasional soap and water cleaning . . . no painting, no repairs, ever. They are economical to erect, too . . . because they are available in modular sizes, which means little or no cutting on the job . . . saving material and labor, with better workmanship assured. Write for descriptive Catalog S-53.

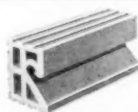


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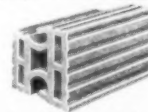
GENERAL OFFICES: 327 FIFTH AVENUE • PITTSBURGH 22, PA.

Branches: New York • Syracuse • Detroit • North Birmingham, Alabama
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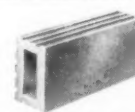
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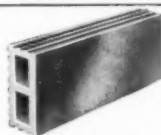
Raggle Blocks
Prevent Water Seepage
4" x 5 1/2" x 12" Nom. Size



Speed-A-Backer Tile for
Backing Brick Faced Walls
12" long Varying Heights



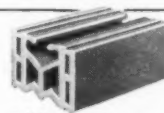
Ceramic, Clear
Glazed Vitritile 5 1/2" x 12"
Nom. Face Size



Ceramic Glazed Vitritile
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Non-Loadbearing Tile, Scored
and Unscored, 12" x 12" Face
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(Factories at Des Moines, Iowa and Philadelphia, Pa.)

Architectural Engineering

LITERATURE

(Continued from page 306)

tarred rag felt, tar saturated asbestos felt and others. Flashing and construction details are also given, and drawings illustrate various materials and different methods of installation. 77 pp., illus.

The second manual contains information on usage, application, estimating quantities, shipping and crating and flashings, and it includes quantity and weight tables for corrugated asbestos-cement roofing and siding. Photographs illustrate actual applications for industrial and decorative purposes, and accessory information is given with descriptive text, photos and drawings. 83 pp., illus. The Philip Carey Mfg. Co., Lockland, Cincinnati 15, Ohio.

Metal Trims for Building

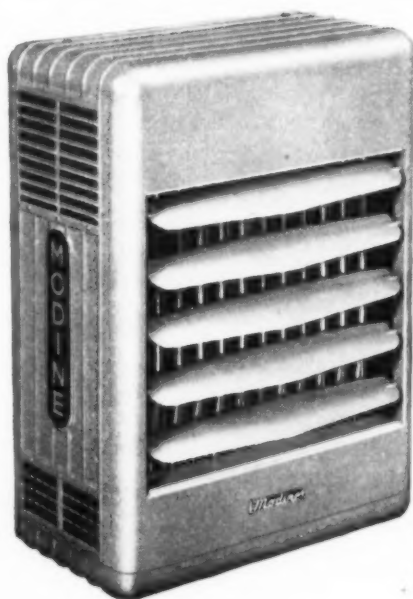
Chromedge Mouldings and Metal Trims (Catalog no. 153). A comprehensive catalog of extruded aluminum alloy and rolled metal retaining shapes for use with all types of floor and wall coverings and other special applications. Apart from the general type-description index on page one, there is a visual index of types on the last pages of the catalog. Application illustrations are included throughout the book, and there are several photographs of actual applications. 65 pp., illus. Inquiries should be addressed to Gen'l Sales Mgr., The B & T Metals Co., Columbus 16, Ohio.*

Hardboard Toilet Compartments

Hardboard Flush Type Toilet Compartments. Bulletin describes new type compartments which are suitable for installations where steel compartments cannot be furnished. Outstanding features, available colors, sizes and specifications are included, and one page is devoted to construction details. Enlarged photographs of various sections plus illustrations of hardware and fittings are given, both in color and black and white. 6 pp., illus. The Sanymetal Products Co., Inc., 1701 Urbana Rd., Cleveland 12, Ohio.*

(Continued on page 311)

Only Modine Gas Unit Heaters give you all **7 BIG ADVANCES** in store and plant heating



... because only Modine builds Gas-Fired Unit Heaters with both Stainless Steel heat exchangers and burners

1 LONGER LIFE — Stainless steel construction resists rust and corrosion — adds years of low-cost service.



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For complete information, call the Modine representative listed in your phone book classified section. Or write for Bulletin 652, Modine Mfg. Co., 1510 DeKoven Ave., Racine, Wis.



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Modine UNIT HEATERS

GU-11-55

LITERATURE

(Continued from page 310)

Sliding Glass Doors

Arcadia Sliding Glass Doors. Booklet includes sections on the steel-framed doors' features, different types and sizes and specifications. Full size standard details and scaled installation details for various types of construction. 8 pp., illus. Arcadia Metal Products, 324 N. Second Ave., Arcadia, Calif.

Modern Wood Construction

Timber for Recreational Buildings. Booklet shows several different designs that can be achieved by the use of three systems of timber construction: Teco connector, glued laminated and Lamella. Liberally illustrated with examples of wood construction in recreational buildings, the booklet also includes a complete list of roof truss fabricators. 24 pp., illus. Timber Engineering Company, 1319 Eighteenth St., N. W., Washington 6, D. C.

Steel Windows and Doors

Truscon Steel Windows and Doors. 1952 Catalog. Divided into three main sections — steel window products, residential doors and industrial doors — the catalog is profusely illustrated with section and installation details, sizes, types and examples of the manufacturer's products in actual use. Main types of windows outlined in the catalog are double-hung, residential casements, intermediate, maxim-air, intermediate louver, Donovan, detention, architectural projected, commercial projected, pivoted, security, screens, continuous and utility windows. Specifications are included for all types of windows and doors. 112 pp., illus. Truscon Steel Co., 1300 Albert St., Youngstown 1, Ohio.

Plumbing Fixtures

Briggs Beautyware. New catalog shows complete line of bathroom and kitchen plumbing fixtures, with full color illustrations of each. Lavatory models are described fully, giving sizes, etc., and all available colors for each unit are given. A section of the catalog is devoted to interior decorating schemes for bathroom and kitchen and a convenient color chart is included with suggestions for best color combinations. 30 pp., illus. Briggs Mfg. Co., 3001 Miller Ave., Detroit 11, Mich.

Plywoods with Matching Doors

Rendezvous Room . . . Malarkey House. The sixth of a series of booklets by the manufacturer on "easy living" plans, this latest one deals with party and guest rooms. Plans for built-ins and other articles of furniture, floor plans and complete bills of materials are presented. Information on the manufacturer's newest plywood is also included. 8 pp., illus. M and M Wood Working Co., 2301 N. Columbia Blvd., Portland 17, Ore.

Furniture Line

The Herman Miller Price List. Booklet divides furniture groups into 14 categories, giving description, dimensions, available finishes and price of each item, along with line drawn illustrations. Measuring 8½ by 11-in., the catalog fits conveniently into a file drawer and is cardboard covered. An explanatory preface provides a detailed key to symbols and diagrams and gives prices for special finishes and extras. 40 pp., illus. The Herman Miller Furniture Co., Zeeland, Mich.

(Continued on page 318)



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Westinghouse Slashes Costs!

Cuts style numbers of all AB Circuit Breakers
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YOU CAN BE SURE...IF IT'S
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AB CIRCUIT BREAKERS
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*Except P-1, Quicklag® and E Breakers

LITERATURE

(Continued from page 314)

Electric Dryers

Electric-Aire Modern Drying Equipment. A catalog of the manufacturer's hand dryers and institutional hair dryers. It includes specifications, installation procedures and suggestions of types of users who should be particularly interested in the products. Hair dryers are available in coin-operated models. 7 pp.,

illus. Electric-Aire Engineering Corp., 209 W. Jackson Blvd., Chicago 6, Ill.

Kitchen Equipment

Be a Queen Every Day with Beauty Queen. Illustrated booklet describes various models of cabinet sinks, which include both superior and standard models. A complete line of wall and base cabinets is also shown, and tables for sizes are given. Illustrations are numbered according to model to facilitate ordering. 12 pp., illus. Beauty Queen Div., Noma Electric Corp., Maumee, Ohio.

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Grilles and Wickets

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Extruded Thresholds

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Manufacturers since 1870 of many products in Bronze, Aluminum and other metals

Ventilating Hoods

The Best Way to Ventilate a Kitchen. Brochure describes both the manufacturer's and "Provincial" models of kitchen ventilating hoods, giving specifications for each. Two types of blower units are also shown and five check points for proper ventilation are included. Roughing-in details indicate dimensions for front, top and side views, and three planning steps for cabinet, vent and electrical are given. 4 pp., illus. Stanthony Corp., 6900 San Fernando Rd., Glendale 1, Calif.*

Synthetic Materials

This is du Pont — Man-Made Fibers. Booklet traces the rise of industry, reporting on the development of five new fibers. Shows the sharp impact of chemical fibers on America's living patterns. Chief sources of all synthetic and natural fibers are given, illustrating with photographs the whole textile history. Shows the various surroundings in which the fibers can be used. 32 pp., illus. E. I. du Pont de Nemours & Co., Wilmington, Del.*

Vermiculite Concrete Floors

Specifications for Vermiculite Concrete Floors. Booklet contains data on vermiculite-sand concrete as a fill over structural floors; as a floor slab over supports on relatively close spacing; and as a slab laid on the ground. Specifications are also included for vermiculite concrete floors on ground (with or without radiant heating units), topped with sand concrete. Details of framework and reinforcing are pointed out by drawings. 12 pp., illus. Vermiculite Institute, 208 S. LaSalle St., Chicago 4, Ill.

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Joseph Allan, Jr., Architect, 311 Morris Cove, Elizabeth 3, N. J.

Ernest Mach, Architect, Gaza Rd., House Kleinberger, Jerusalem, Israel.

Joseph H. Mangs, Student, 255 Friendship St., Providence, R. I.

D. D. Power, Architect, 144 Rivo Alto Canal, Long Beach, Calif.

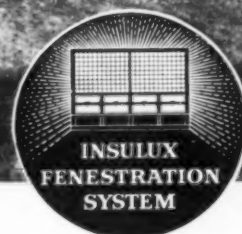
Henry A. Ripplemeyer, Architect, 943 Harden St., Columbia 5, S. C.

Syska & Hennessy, Inc., Engineers, 144 E. 39th St., New York 16, N. Y.

Utah Co. of the Americas, 120 Broadway, New York 5, N. Y.



Judah Frisbee School, Wolcott, Conn. General Contractor: P. Francini & Co., Inc.
Architect: Warren H. Ashley and C. J. Malmfeldt Associates.



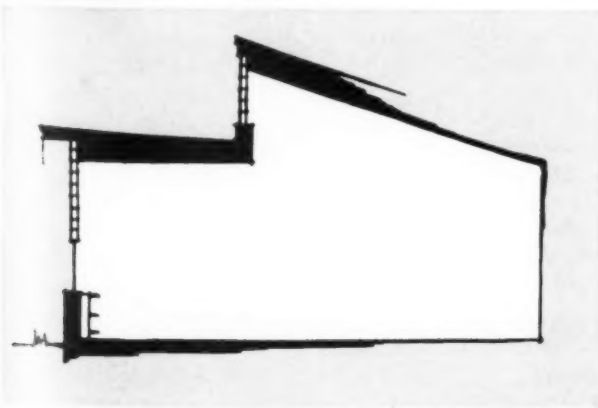
Better sight from better light through Daylight Engineering and glass block

"QUALITY LIGHTING" exists when glare and contrast are reduced to a minimum and daylight is distributed evenly throughout the room.

Through the application of Daylight Engineering principles, an Insulux Fenestration System (using light-directing Insulux Glass Block® plus vision-ventilation strip) eliminates excessive glare, provides diffused daylight even into the far corners of classrooms.

Make sure your schools have this "quality lighting"—for lighting authorities agree that good seeing conditions depend even more on light quality than on light quantity.

Daylight Engineers can help you to build schoolrooms with the right "quality"—and quantity—of daylight. The 24-page booklet, "Better Light for Our Children," gives more details. For your free copy, or for the help of a Daylight Engineer write: Insulux Glass Block Division, Kimble Glass Company, Dept. AR-10, Box 1035, Toledo 1, Ohio.



Cross sectional view of classroom. The primary fenestration consists of continuous panels of light-directing Insulux Glass Block over a steel sash vision strip. The secondary fenestration, having the same orientation, consists of five courses of light-directing block in a sawtooth arrangement.

KIMBLE GLASS COMPANY



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Toledo 1, Ohio

THE RECORD REPORTS

HOW TO GET RID OF IT: CURRENT DEBATE ON CMP

AS SUPPLIES of once-critical materials continued to improve, and the National Production Authority announced it planned substantial relaxation of building curbs "for April 1," the questions about the end of the Controlled Materials Plan became mostly procedural — the timing and tactics of the "orderly

WASHINGTON (Cont. from p. 38)

retreat" officials have long said would be their goal.

For architects planning projects that won't reach the construction stage before next summer the headaches are probably over now; in spite of official caution, indications are that CMP will not be operative, except perhaps in "standby" form, beyond the first half of next year.

The building industry has been protesting strongly at the NPA announcement of April 1 as the date for the next major easing of curbs; what the industry wants is total removal at a much earlier date. The October 26 session of NPA's Construction Industry Advisory Committee can be expected to provide a forum for these views — and it could produce a revision in NPA plans.

Better Supplies Acknowledged

Some recent government announcements are providing fuel for industry arguments.

The eighth in the series of the Defense Production Administration's "List of Basic Materials and Alternates" for the first time since the Korean emergency began removed aluminum and copper from the group of materials in short supply and placed it among those "in approximate balance with defense and essential civilian demand."

The new chief of the Office of Defense Mobilization, familiar as DPA-NPA Administrator Henry H. Fowler, has admitted he was overly pessimistic about the effects of the steel strike; the steel industry has made an incredible comeback.

A Federal Reserve Board survey revealed stocks of most building materials, including fabricated metal products, were not far below postwar record levels.

Time for Liquidation?

The appointment of Mr. Fowler to the ODM post resigned last spring by Charles Wilson was interpreted in some quarters as indicating the Administration now considers the mobilization program is in the "liquidation" stage.

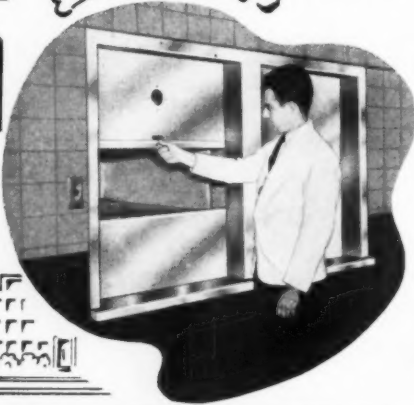
Mr. Fowler, who resigned the NPA post but continues as DPA administrator, has stated frequently that enough materials are now available or coming into production to enable defense production goals to be raised without hurting the civilian economy. Mr. Fowler is a lawyer, not a production man, another reason for guessing his selection may presage the passing of the era of rigid curbs. He himself said in his last press conference as NPA chief that controls may end next year; that emphasis will now be, not on industrial expansion and rigid materials controls but on seeing that defense production itself gets into high gear.

Revisions of building regulations in late August effective immediately elimi-

(Continued on page 326)

Why **SLAM** the Door...

HOSPITAL
QUIET
ZONE



...on greater

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- Eye-Appeal!
- Extra Protection!
- Ease of Operation!

SECURITY *Uni-Bilt* DUMBWAITER DOOR UNITS

... vastly different from other makes—Security Door Units are doing a smoother, quieter, better job for America's most progressive hospitals and restaurants.

Although frequently overlooked, proper construction and design of Door Entrance Units is essential to any Dumbwaiter, trayveyor, or subveyor installation. No part receives more wear or is subject to as much damage or abuse.

Factory-assembled as a complete door with frame and trim as a unit, these easily installed doors must be set before walls are erected. Constructed to give **LASTING** trouble-free service, Security Doors provide improved operation with their adjustable **ANTI-FRICTION GUIDE SHOES** and rugged, easy action **THUMB-OPERATED POSITIVE LATCHES**. **ELECTRIC INTERLOCKED** for Safety with Security's own sturdy switches, these doors are usually furnished with **INSULATED PANELS**, and may be **UNDERWRITERS LABELED** for complete fire protection.

For over 30 years Security has specialized in, developed, and built unsurpassed Dumbwaiter and Freight Elevator Door Entrance Units

A FEW OF THE MANY HOSPITALS USING SECURITY UNITS

- St. John's, Detroit • Cedars of Lebanon, Los Angeles • Blodgett, Grand Rapids
- U. of Cal., Moffitt Hospital, San Francisco • Good Samaritan, Los Angeles
- Grace-New Haven, New Haven



Counter Door Units at F. W. Woolworth's largest store in Houston are typical of Security installations in Woolworth stores throughout the country.

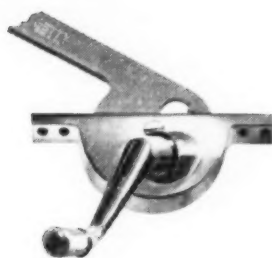
S. H. Kresge, Sears Roebuck and W. T. Grant are other chains that have many Security installations.

Write for Catalog

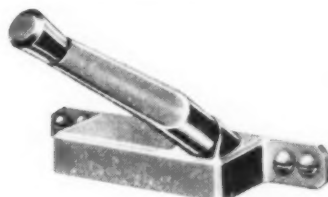
Security Fire Door Co.

3047 LAMB DIN AVE., ST. LOUIS 15, MO.

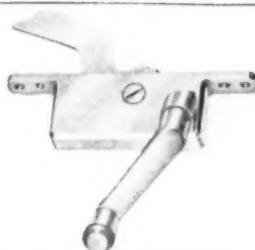
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operators
are found
on more
casement
windows
than all
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operators
combined



Getty Operator 4703AF A de luxe operator for all metal casements. Superior because of its powerful internal gear—an exclusive Getty feature



Getty Operator 4706 A popular priced operator for metal casements. Precision made, externally geared, angle driven.



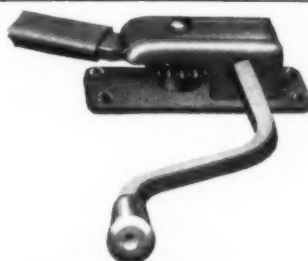
Getty Operator 4706H is the only replacement operator for metal casements made. Its specially drilled holes accommodate nearly all metal casements, regardless of the type of operator being replaced.



Getty Operator 4703W For any wood casement. Unexcelled in construction and functional design. Houses a powerful internal gear—an exclusive Getty feature.



Getty Operator 4715 For wood casements. Economically priced and well constructed—with an external gear and angle drive.



Getty Operator 4700 Heavy Duty (reversible) for wood casements. It is a horizontal worm-and-gear operator—not handed.

H. S.

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PHILADELPHIA 40, PA.



Canadian representative: A. N. Ormsby Co., 23 Scott St., Toronto

For Gleaming, Corrosion-Resistant Interiors



Cuts Your Material Costs Puts New Beauty in Your Designs

Wondering how to make a new interior *completely* modern—or put new beauty in an old one? PERMACLAD Stainless Clad Steel may be your cost-cutting answer.

We make PERMACLAD by diffusion-welding a layer of stainless steel *inseparably* to a mild carbon steel backing. **Result:** PERMACLAD has the lasting, corrosion-resistant beauty of solid stainless and the cost-cutting, easy-forming qualities of mild steel.

The stainless layer is usually 10% or 20%, but may be more or less if desired. Also, reduction of weight is possible through the use of A.W. DYNALLOY, low-alloy, high-strength steel as a backing in place of ordinary mild carbon steel.

Doors, panels, escalators, wall panels, and interiors of all kinds can be fabricated easily with PERMACLAD. For technical data write for our free, 8-page Booklet P-88. Our engineering staff will be glad to talk with you about any specific problem and make installation suggestions.

FOR BETTER PRODUCTS AT LOWER COST... Specify PERMACLAD

Over 125 Years of Iron and Steel Making Experience

PERMACLAD Stainless Clad Steel
ALAN WOOD STEEL COMPANY
Conshohocken, Pa.

Gentlemen: Please send me additional information on PERMACLAD Stainless Clad Steel—and a copy of your free, 8-page Booklet P-88.

Name _____
Title _____
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Other Products: A.W. ALGRIP Abrasive Floor Plate • A.W. SUPER-DIAMOND Floor Plate • Plates • Sheets • Strip • (Alloy and Special Grades)

THE RECORD REPORTS

WASHINGTON

(Continued from page 322)

nated NPA Order M-100, controlling materials for housing, and incorporated M-100 provisions into CMP Regulation Six. Another change authorized owners to use inventory on hand before Oct. 1, 1951.

NEW N.E.A. SURVEY SHOWS SCHOOL NEEDS PILE UP

In spite of the large volume of recent and current school building, the gap between available classroom space and the space needed to meet continuing increased enrollments is nowhere near closed, according to a new survey just completed by the National Education Association.

N.E.A., which will publish the survey results in full in the October issue of its *Research Bulletin*, reports 47 per cent of the 1270 school systems queried have had to postpone projects which would accommodate a total of 343,000 pupils because of shortages of funds or materials or both.

In another 162 school systems, projects for 115,315 pupils have been halted by the same factors.

As the 1952-53 school year opened, enrollments mounted again; 81.8 per cent of the communities responding reported increases.

N.E.A. believes that the problem of finance ranks almost on a par with materials shortages as a deterrent to new construction. Nearly all school systems reporting showed increases in current expenditures, many in capital outlays. Administrators said all levels of government have had some part in supporting increased expenditures; but in most cases extra funds have come through state aid rather than from Federal or local sources.

Replies to the N.E.A. questionnaire came from 14 of the 18 school systems in cities over 500,000 population; 67 of the 90 systems in cities 100,000 to 500,000; 213 of 320 systems in cities 30,000 to 100,000; and 349 of 965 systems in cities 1,000 to 30,000.

AEC PREPARES TO BUILD \$1.2 BILLION OHIO PLANT

Plans for a \$1.2 billion gaseous diffusion plant to produce uranium-235 on a

(Continued on page 330)

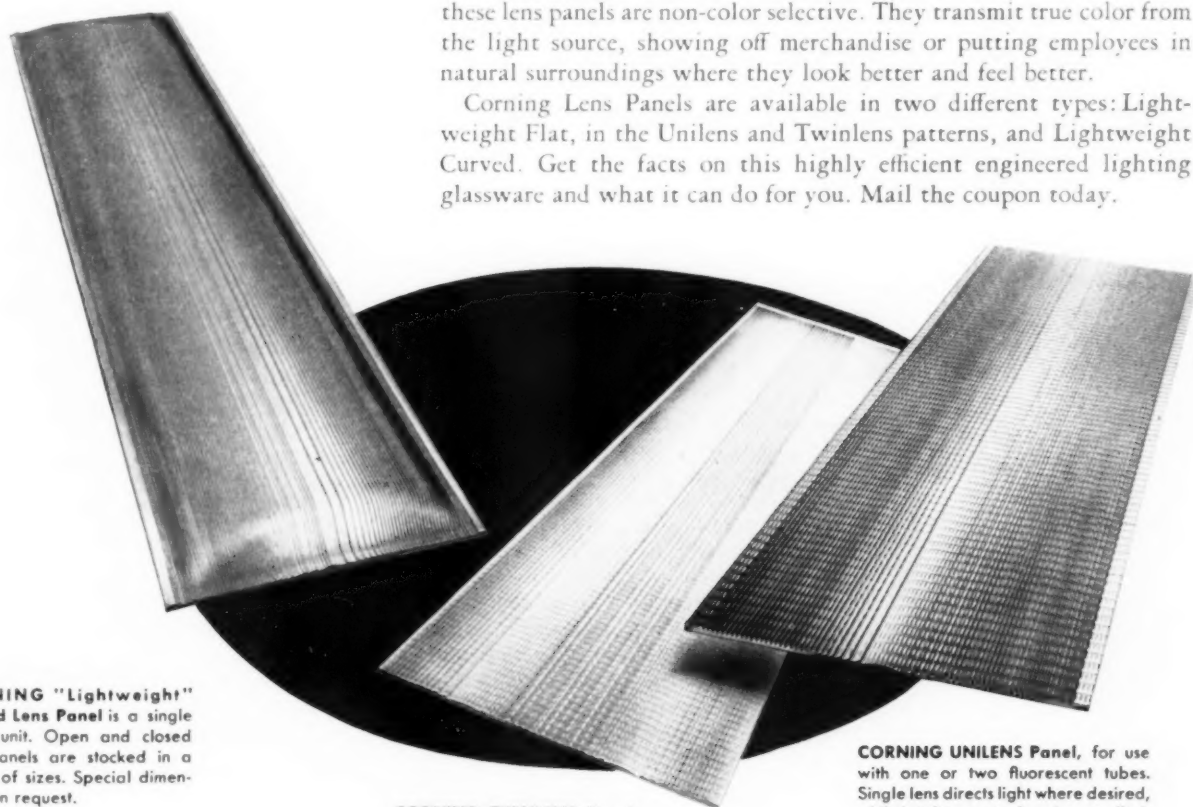
CORNING LENS PANELS

Put the *right* light
where it is needed

Here's how you can give your customers smooth, evenly distributed light with carefully controlled brightness. New Corning Lens Panels with Fresnel design lenses eliminate shadow and glare—direct light where it is needed.

Light in weight and easy to handle, Corning Lens Panels are made in long lengths, making possible attractive, continuous runs with a minimum of unsightly butts and light leakage. Their light weight also keeps shipping, fixture, and installation costs low. What's more, these lens panels are non-color selective. They transmit true color from the light source, showing off merchandise or putting employees in natural surroundings where they look better and feel better.

Corning Lens Panels are available in two different types: Lightweight Flat, in the Unilens and Twinlens patterns, and Lightweight Curved. Get the facts on this highly efficient engineered lighting glassware and what it can do for you. Mail the coupon today.



CORNING "Lightweight" Curved Lens Panel is a single piece unit. Open and closed end panels are stocked in a range of sizes. Special dimensions on request.

CORNING TWINLENS Panel, for two to four tubes, provides high lighting efficiency. Fluted rear surface intercepts light, prevents transmission of lamp image.

CORNING UNILENS Panel, for use with one or two fluorescent tubes. Single lens directs light where desired, while brightness at edges is controlled.



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Corning means research in Glass

CORNING GLASS WORKS, Dept. AR-10, Corning, N. Y.

Please send me your Catalog LS-32 "Corning Glassware for Fluorescent Lighting."

Name _____ Title _____

Firm _____

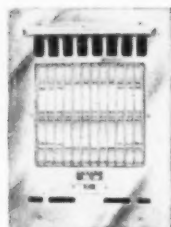
Address _____

City _____ Zone _____ State _____

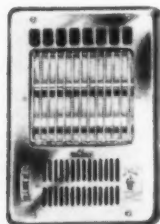


HOW TO PICK THE RIGHT HEETAIRE

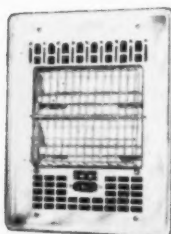
for every room
You Build or Modernize



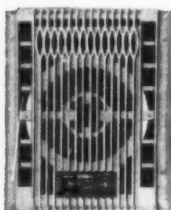
Series 200 HEETAIRE
1000 to 2000 watts



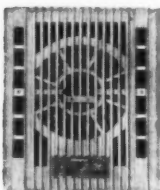
Series 230 HEETAIRE
1250 to 3000 watts



Series 240 HEETAIRE
1000 to 1500 watts



Series 210 HEETAIRE
3000 to 5000 watts



Series 250 HEETAIRE
1500 to 3000 watts

The **FOUR FACTORS** to be
considered in choosing specific
HEETAIREs for specific jobs are:

1. Size of Room
2. Exposure of Room
3. Use of Room
4. Climate

These four factors — size, exposure, use and climate — are the keys for selecting the specific HEETAIREs and temperatures necessary to heat any room.

In general, wattages per cubic foot determine the size of HEETAIRE recommended — but these wattages vary according to heat loss in the room (wall, window and door exposures) and according to the outside temperatures (e.g., more wattages per cubic foot are necessary in New York State than in Tennessee). In addition, the use of room to be heated determines the temperature desired and the type of HEETAIRE recommended — radiant (infra-red) heat, or heated air. Radiant heat is recommended for rooms where the primary objects to be heated are people (Series 200, 230, 240); heated air is recommended where general temperature levels are to be maintained (Series 210, 250).

Series 210 and 250 HEETAIREs are recommended for both supplementary and general heating.

FREE! Write for the copyrighted
"A Guide to Quick Heating".



Tested and listed under reexamination service by
Underwriters' Laboratories, Inc.
Thermostatic or Manual Control . . . Radiant Heat,
Heated Air and Fan-Forced Radiant Heat . . . Wall
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157 SENECA STREET • BUFFALO 3, NEW YORK

THE RECORD REPORTS

WASHINGTON

(Continued from page 326)

6500-acre site in Pike County, Ohio, as announced by the Atomic Energy Commission, brought the total of AEC installations to five and total funds committed to AEC construction since 1913 over the \$6 billion mark.

AEC said the various phases of design and architectural work for the Pike County plant will be handled by "concerns that include at present" Union Carbide and Carbon Corporation, New York City; Giffels and Vallet, Inc., Detroit; Sargent and Lundy, Chicago; Singmaster and Breyer, New York City; Smith, Hinchman and Grylls, Inc., Detroit; Burns and McDonnell, Kansas City, Mo.; and Holabird and Root and Burgee, Chicago. Peter Kiewit Sons' Company, Omaha, Neb., is the principal construction contractor.

Locations had been studied for many months before funds became available in the appropriations bill passed at the end of the last session of Congress. The potential availability of power at reasonable cost in quantities required for the plant and availability of water were described as important factors in selection of the site.

Although, in line with the policy of the past two years at new installations there will be no AEC-built and operated community, AEC will provide housing accommodations for single construction workers; the Housing and Home Finance Agency will take over the job of supplying shelter for workers with families and will also program for private construction whatever permanent housing is needed for AEC operating personnel. HHFA is now making preliminary surveys.

Peak construction employment is estimated at 28,000; operating staff at 4000. Completion is expected to take four years, but portions of the plant will be placed in operation as soon as they are finished.

SALARY STABILIZERS FREE ARCHITECTS — AS DEFINED

An interpretation of the Defense Production Act 1952 amendments exempting from salary stabilization "certain professional architects" has been issued by the Office of Salary Stabilization.

(Continued on page 334)

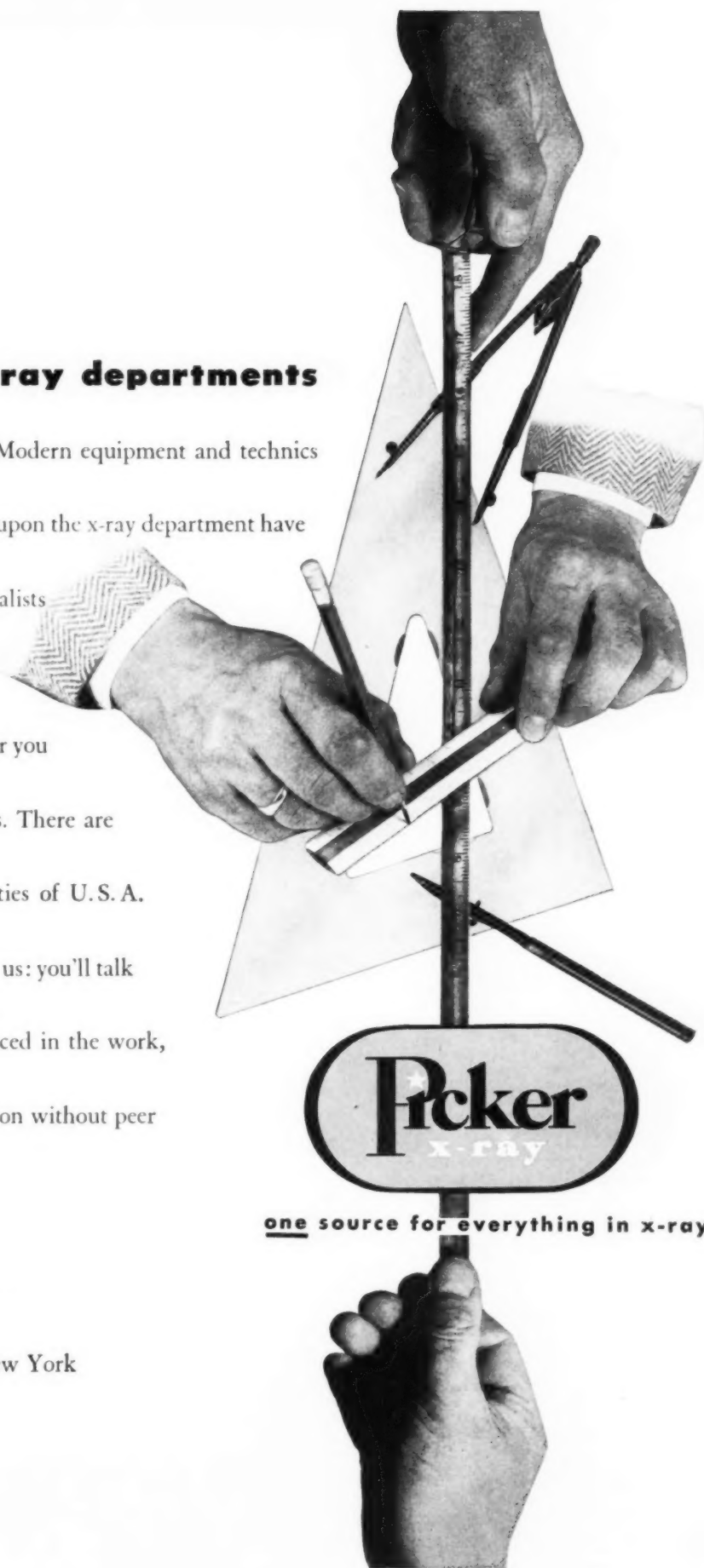
planning hospital x-ray departments

is a very exacting business nowadays. Modern equipment and technics have become so complicated; demands upon the x-ray department have grown so hugely that you'll need specialists to help in laying it out efficiently.

That's where we can serve you whenever you have a hospital project on your boards. There are Picker x-ray offices in all principal cities of U.S.A. and Canada. Call any of them, or write us: you'll talk to a capable man, thoroughly experienced in the work, backstopped by a planning organization without peer in the x-ray field.

PICKER X-RAY CORPORATION

25 South Broadway, White Plains, New York



For heavy traffic areas



This modern office building features floors of Wright Rubber Tile—both in the building and in the elevators.

nothing wears as well as **WRIGHT RUBBER TILE!**

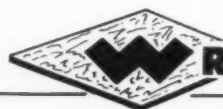
Look at the floor of the next elevator you see. The chances are, it has a floor of rubber tile, because no other flooring stands heavy traffic wear like rubber.

And if you could tell the make of rubber tile used, you would be

surprised at how often it would be *Wright Rubber Tile.*

The next time you specify a heavy-traffic floor—remember the elevators! Then specify Wright Rubber Tile with complete confidence.

WRIGHT MANUFACTURING COMPANY
5205 Post Oak Road Houston 5, Texas



WRIGHT RUBBER TILE

FLOORS OF DISTINCTION

- WRIGHTEX—Soft Rubber Tile
- WRIGHTFLOR—Hard Surface Rubber Tile
- WRIGHT-ON-TOP Compression Cove Base

THE RECORD REPORTS

WASHINGTON

(Continued from page 330)

According to Interpretation No. 14, a professional architect is "one who is licensed or registered to practice as a professional architect in any state, territory or possession of the United States or in the District of Columbia."

Exemption from salary stabilization applies only to professional architects "employed in a professional capacity" as defined (believe it or not) in Regulations, Part 541, issued by the Administrator of the Wage and Hour and Public Contracts Divisions pursuant to provisions of the Fair Labor Standards Act of 1938, as amended.

Copies of the interpretation are available from OSS, Federal Security Building South, Washington, D. C.

PALEY REPORT CALLS FOR CONSERVATION OF COPPER

15 Per Cent Increase in Demand Predicted By 1975

As copper left the current "critical" list, the President's Materials Policy (Paley) Commission issued a five-volume report (ARCHITECTURAL RECORD, August 1952, page 18) that put it right back for some future year — 1975, for instance. In that year, the report estimates, a half million more tons than in 1950 may be required to meet demand.

This estimate of a 15 per cent increase over 1950 consumption takes into account expected substitution of aluminum and other materials for copper in many uses. Building construction accounted for 10 per cent of total copper construction in 1950.

The report plumps for vigorous concentration on increasing copper output from all possible sources. Even this, on a worldwide basis, would not assure meeting the anticipated need, the Commission says; a technology of substitution is required.

The Commission suggests that a widespread substitution of aluminum for copper or brass is practicable because of the basic similarity in the properties of the two metals: both are good electrical and heat conductors, are easily machined and worked, and are resistant to

(Continued on page 338)



Chairman of the Board's office, Sterling Advertising Agency, New York City. This room is done in Natural Walnut Weldwood Plywood. Architect: Louis Hatkoff.

You'll easily get a Client's *OK* on *Beautiful* **Weldwood® Plywood!**



Typical executive office, also paneled in beautiful Natural Walnut Weldwood Plywood.

Sterling Advertising Agency of New York City finds that Weldwood Plywood paneling is good advertising and good public relations.

It gives their offices a really *professional* look . . . an atmosphere that reflects trustworthy experience.

But in addition to the beauty and quality of these rich-looking panels, Weldwood Plywood also has its *practical* side!

In the first place, it is reasonable in cost.

It is installed quickly and easily . . . goes right over existing walls. Even over cracked, unsightly plaster.

It is extremely durable. (Interior Weldwood Plywood is guaranteed for the life of the building.)

And it eliminates all the expense of future redecorating. THAT'S real economy!

Weldwood Plywood is available in a wide variety of fine woods . . . domestic and imported. Genuine Walnut . . . Knotty Pine . . . Oak . . . Korina® . . . Maple . . . Birch . . . Gum . . . Mahogany.

Make it a point to consider beautiful, economical Weldwood Plywood for every one of your redecorating and new building contracts.



WELDWOOD® Plywood

Manufactured and distributed by

UNITED STATES PLYWOOD CORPORATION New York 36, N. Y.

World's Largest Plywood Organization

and **U. S.-MENGEL PLYWOODS, INC.,** Louisville 1, Ky.

Branches in Principal Cities • Distributing Units in Chief Trading Areas • Dealers Everywhere

THE RECORD REPORTS

WASHINGTON

(Continued from page 334)

atmospheric corrosion. It is added that recent advances in aluminum welding technology promise to increase the use of aluminum still farther in applications previously reserved to copper and brass.

Other substitutions mentioned: cast



Gordon Bunschaft, chief designer for Skidmore, Owings & Merrill, Architects & Engineers, has designed a new storefront for Bohack, Long Island supermarket chain. It is being used for the first time on the Babylon, L. I., supermarket now under construction. The heavy plate glass panels are set in reinforced steel mullions.

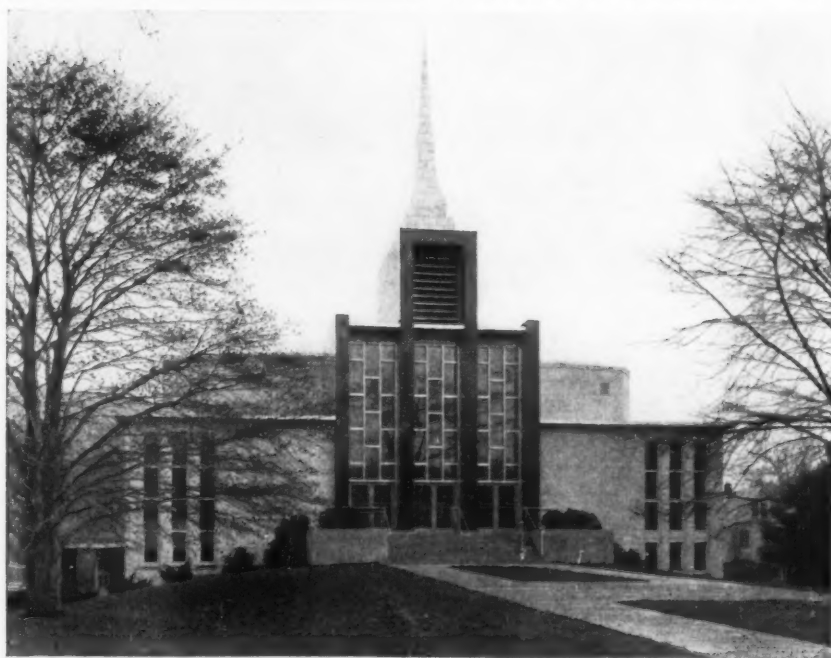


Ellison

the **BALANCED DOOR**

10 in the ENTRANCES to First Church of Christ Scientist New Haven, Conn.

ARCHITECT
the office of DOUGLAS ORR



The Door that lets
TRAFFIC through **QUICKLY**

Ellison

the **BALANCED DOOR**

ELLISON BRONZE CO.

Jamestown, New York

representatives in 71 principal cities

iron backing for babbit metal instead of bronze in railroad bearings and alloy steel and plastics in a variety of uses.

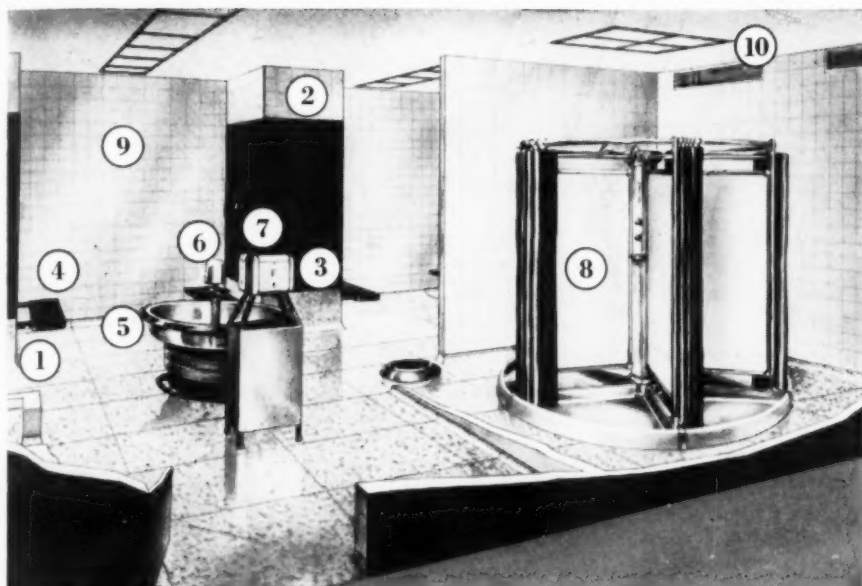
ADDENDA

- President Truman has ordered four Federal agencies to carry out immediately the recommendations made in the recent report of his commission on airport safety. The agencies — Department of Defense, Department of Commerce, the Post Office Department and the Civil Aeronautics Board — were asked to consult with state and local governments and interested industry groups in the process of implementing the recommendations.

The report (ARCHITECTURAL RECORD, July 1952, page 38) contained numerous recommendations on airport construction and design as well as zoning around airports.

- The Regional Plan Association of New York reported results of a 12-month survey showed that five out of every six plants built in the New York area between 1946 and 1951 were erected beyond the limits of the major industrial districts existing at the close of World War II. The trend to decentralization was attributed to the desire for more space, economy of operation, decreased vulnerability in case of enemy air attack and the prospect of "more predictable" tax levies.

(Continued on page 342)



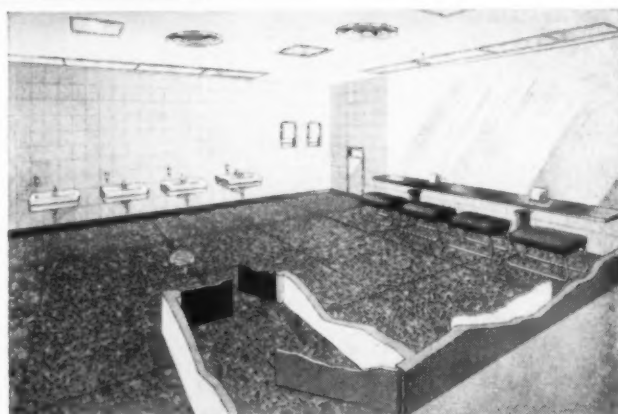
All kinds of man-hour savers, in this modern combination Locker Room, Shower Room and Washroom:

1. Lockers mounted flush on terrazzo or cement islands, without legs.
2. Mechanical ventilation via fresh dry air intake drawn through perforated locker ceiling and floor plates to exhaust duct.
3. Locker floor plates inclined and provided with shoe cleats.
4. Benches off floor projecting from locker islands.
5. Circular stainless steel wash fountain for 8-10 persons. Has foot-ring water control.
6. Soap dispenser on wash fountain.
7. Towel dispenser-waste receptacle unit for heavy traffic.
8. Circular showers for 5 users. Colorful, plastic shower curtains.
9. Walls of tile or glass, moisture-resistant.
10. Recessed ceiling lights directly over shower.

Now man-hour savings can be **"BUILT-INTO"** a building

IN THESE DAYS of pyramiding costs of operation, your client is on the alert for every money saver, waste cutter and man-power saver . . . especially in a new plant. "Save one man-hour a day—save 250 man-hours per man a year!" is his thinking. When he multiplies that by the number of employees, he's thinking about *big* savings.

All the more reason you should give him the latest in washroom equipment, *built right into* his plant. Modern fixtures, properly placed, can save man-hours and money by keeping traffic moving—reducing washroom tie-ups and untidiness. Use of off-the-floor fixtures can cut washroom cleaning costs, eliminate dirt-catching corners. Pleasant, modern personal service rooms can pay dividends by reducing illness and boosting morale.



One for morale—this spacious comfortable ladies' washroom. Note "powder-bar" mirror with shelf and light—away from wash basins to keep traffic moving.

Talk to a *specialist* on modern washroom equipment—call in your Scott Washroom Advisory consultant. At his fingertips he has a complete file of washroom fixtures. Above all, he can draw on the "know-how" gained servicing and supplying more than half-a-million washrooms. Get *all* the details—based on *actual experience!* Contact Washroom Advisory Service, Scott Paper Company, Chester, Pa.

Send for FREE Leaflet...
"Plant Washroom Designing"

Washroom Advisory Service,
Dept. AR 10
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At no cost or obligation, please send me your study of personnel, traffic and maintenance problems, "Plant Washroom Designing."

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SCOTT
Symbol of
Modern Washrooms

"Washroom Advisory Service" Reg. U. S. Pat. Off.

THE RECORD REPORTS

(Continued from page 338)

- Managing Director H. E. Foreman of the Associated General Contractors of America told the midyear meeting of A.G.C.'s governing and advisory boards at White Sulphur Springs that there is still a "tremendous backlog" of needed construction despite record levels of construction activity in recent years and a "strong likelihood" that the 1952 volume of the industry will establish a new high.

- To coordinate Defense Production Administration activities in the field of post-attack industry rehabilitation and industrial dispersion, a Post-Attack Production Staff has been set up in DPA's Office of Construction and Resources Expansion. William Jay Hoff will head the staff as assistant deputy administrator of OCRE.

The program will include: development of plans by government and indus-

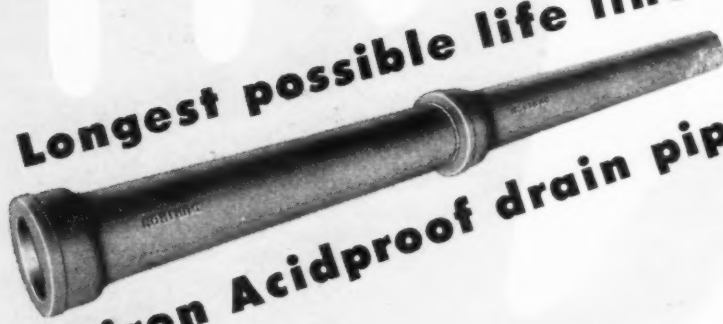
try for rebuilding industry after enemy attack; development of plans for industry operation during the rebuilding period; and implementation by government and industry of such parts of these plans as can be carried out prior to attack — including industrial dispersion.

- The Federal National Mortgage Association resumed the purchase of eligible FHA-insured and VA-guaranteed mortgages on nondefense and nondisaster housing as of September 2. FNMA purchases on this type of housing had been discontinued last April 2 except for mortgages offered prior to that date.

- More than 900 school districts throughout the United States have applied for Federal funds to help provide minimum school facilities in communities adjacent to defense plants and military areas, the Office of Education announced last month. In the first two months after \$195 million in funds appropriated by the last session of Congress became available, \$117 million had been allocated.

The Veterans Administration has immediate vacancies for engineers in Washington, D. C., and throughout the country. No experience is required, but a college degree in civil, general, mechanical or construction engineering is essential. Beginning salary is \$3410 a year. Applications should be addressed to the Department Personnel Officer, Veterans Administration, Washington, D. C.

Longest possible life line
Duriron Acidproof drain pipe



Not a coating, Duriron is a high silicon iron which offers extremely high resistance to most acids throughout the thickness of the pipe wall. Widely used in industrial plants and laboratories, hospitals, kitchens and wherever corrosive waste disposal is a concern.

Since Duriron is designed as a permanent installation, the first cost is the last cost, in most cases. Labor cost is the same as that for installing ordinary soil pipe.

Jobbers in principal cities are stocked with Duriron pipe and fittings for early delivery. Write for Catalog PF/1.



THE DURIRON COMPANY, Inc.
405 N. Findlay St. • Dayton 1, Ohio

AVAILABLE FROM STOCK IN PRINCIPAL CITIES

ON THE CALENDAR

Oct. 1-3: 1952 Convention, Architects Society of Ohio — Cincinnati.

Oct. 2-3: Great Lakes District, American Institute of Architects, Seminars Netherlands Plaza Hotel, Cincinnati.

Oct. 2-4: Annual Convention, New York State Association of Architects — Lake Placid.

Oct. 3-5: Meeting, Northwest Regional Council, American Institute of Architects — Davenport Hotel, Spokane, Wash.

Oct. 9-11: Regional Convention, Central States District, American Institute of Architects; theme, "Esthetic Evaluation of the Art of Architecture" — Kansas City.

Oct. 9-11: Joint Convention, California Council of Architects and Sierra

(Continued on page 316)

IT'S NEW

IT'S BETTER

IT'S **bryant's** SENSATIONAL

"327" UNIT HEATER



Sets NEW standards in . . .

Quiet Operation . . . NO narrow passages to cause whistling . . . it's open, streamlined—efficiently designed to HUSH the air flowing through.

Compactness . . . the "327" installs within inches of ceiling, saving space. It's lighter, easier to handle, easier to install.

Comfort . . . no cold blasts at start of cycle. Fan won't start until the heat exchanger is warm enough to assure comforting heat.

Long, Trouble-free Performance . . . the "327" retains its high efficiency for life. Efficient Venturi tubes provide longer, trouble-free service, less heat loss up the flue.

Extra-Sensitive Controls . . . responsive low-voltage controls mean better, more uniform heat. Safety controls prevent overheating.

Quick, Easy Servicing . . . easy-open access panel at bottom permits cleaning and servicing without removing unit.

Now Available in All Popular Sizes—Specify the revolutionary Bryant "327" for stores, offices, factories, warehouses, shopping centers or remodeling jobs. Call your Bryant dealer or write Bryant Heater Division, Affiliated Gas Equipment, Inc., Dept. 217, 17825 St. Clair Ave., Cleveland, Ohio.



FREE for the Asking!

Call your Bryant distributor for your copy of this 20-page, fully illustrated book which provides helpful information on specifying, installing and properly locating unit heaters.

bryant® *best buy in*
HEATING AIR CONDITIONING • WATER HEATING

THE RECORD REPORTS

(Continued from page 342)

Nevada District, American Institute of Architects — Yosemite National Park, Calif.

Oct. 10: Third Annual Noise Abatement Symposium — Armour Research Foundation, Illinois Institute of Technology, Chicago.

Oct. 11: 20th Century Sculpture, large retrospective exhibition of 50 years of



Three new partners in Magney, Tusler & Setter of Minneapolis: (left to right) Stowell D. Leach, John Lindstrom and John R. Magney



CRAFTSMANSHIP • PERFECT FITTING • LASTING QUALITY DISTINGUISH **H·H·M METAL CASEWORK** FOR HOSPITALS AND OTHER INSTITUTIONS

Built into every unit are the know-how and the craftsmanship which for well over a century have gone into the design and production of our world-famous bank vaults and equipment.

That's why, in H.H.M. Hospital Casework, drawers slide extra smoothly and quietly, why cabinet doors fit extra snugly.



Just Off the Press — 48-Page DeLuxe Catalogue

Ask for Catalog No. 510-018. Included in it you will find photographs of modern hospitals — probably one or more in your locality — in which you may inspect H.H.M. Metal Casework installations.

INSTITUTIONAL EQUIPMENT DIVISION
Herring-Hall-Marvin Safe Co.
HAMILTON, OHIO



American and European sculpture, organized by New York's Museum of Modern Art — Museum of Art, Philadelphia.

Oct. 14-17: 1952 Annual Conference, National Association of Housing Officials — Hotel Statler, Buffalo.

Oct. 19-25: VIII Congreso Panamericano de Arquitectos — Mexico City.

Oct. 20-24: 40th National Safety Congress and Exposition, sponsored by the National Safety Council — Chicago.

Oct. 22-Nov. 30: Olivetti, an exhibition on the Olivetti Company of Italy illustrating this firm's integration of modern design in their products, advertising, architecture and equipment. Photographs, models and actual objects — Museum of Modern Art, 11 W. 53rd St., New York City.

Oct. 23-Nov. 26: Design in Industry, an educational exhibition intended to review the industrial design experience of the Institute and ten major American companies — The Institute of Contemporary Art, 16 Newbury Street, Boston.

Oct. 24-25: Regional Conference, Gulf States District, American Institute of Architects — Montgomery, Ala.

Oct. 26-28: Semiannual Meeting, Board of Directors, American Institute of Architects — Grand Hotel, Port Clear, Ala.

Oct. 29-31: Annual Convention, Texas Society of Architects — El Paso, Tex.

Nov. 9-Dec. 7: 17th Ceramic National Exhibition, sponsored jointly by Syracuse Museum of Fine Arts, Onandaga Pottery Company of Syracuse and Ferro Corporation of Cleveland — Syracuse.

(Continued on page 350)

you name the indoor highway...

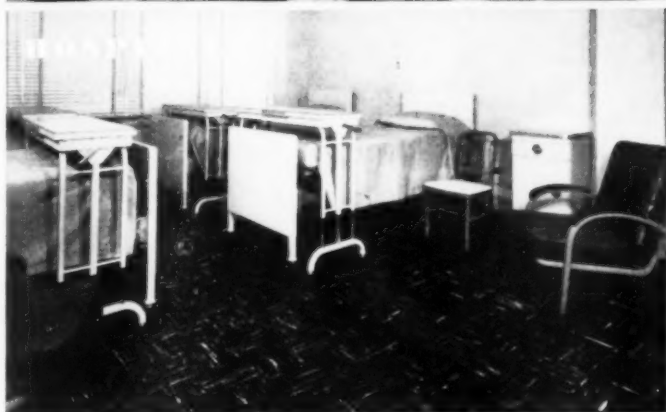
we have a floor covering to meet your specifications



= UTILITY + BEAUTY

Where greater grease-proof properties plus the every day resistance to alkalis, mild acids, fats, oils, naphtha and even gasoline is specified... VINYLFLEX, the all purpose vinyl plastic floor tile, is the answer. In addition, VINYLFLEX is exceptionally resilient, yet tough, assuring longer wear with minimum care. VINYLFLEX is made in 13 outstanding beautiful colors that can be applied on or below grade.

*Trade Mark Applied For



= ECONOMY + DURABILITY

Durable, Resilient, Economical HAKO ASPHALT TILE features modern new pastel and standard marbleized colors in limitless patterns and combinations. For permanent protection, lasting utility, inexpensive luxury and durability, HAKO ASPHALT TILE is the choice of architects and builders all over America. Millions of feet of HAKO ASPHALT TILE have been installed in schools, hospitals, hotels, government buildings and housing and commercial projects throughout the country.



= DIGNITY + ADAPTABILITY

This newest type HAKO asphalt tile flooring, with the natural oak color and simulating hardwood parquet, has a quiet dignity that will enhance the appearance of residential, commercial and institutional floors. PARQUETRY is ideal for floors with Radiant Heating and is available in 9"x9" size in $\frac{1}{8}$ " and $\frac{3}{16}$ " thickness. HAKO PARQUETRY FLOOR TILE has all the best characteristics of HAKO asphalt tile plus beauty, economy and long wearability.

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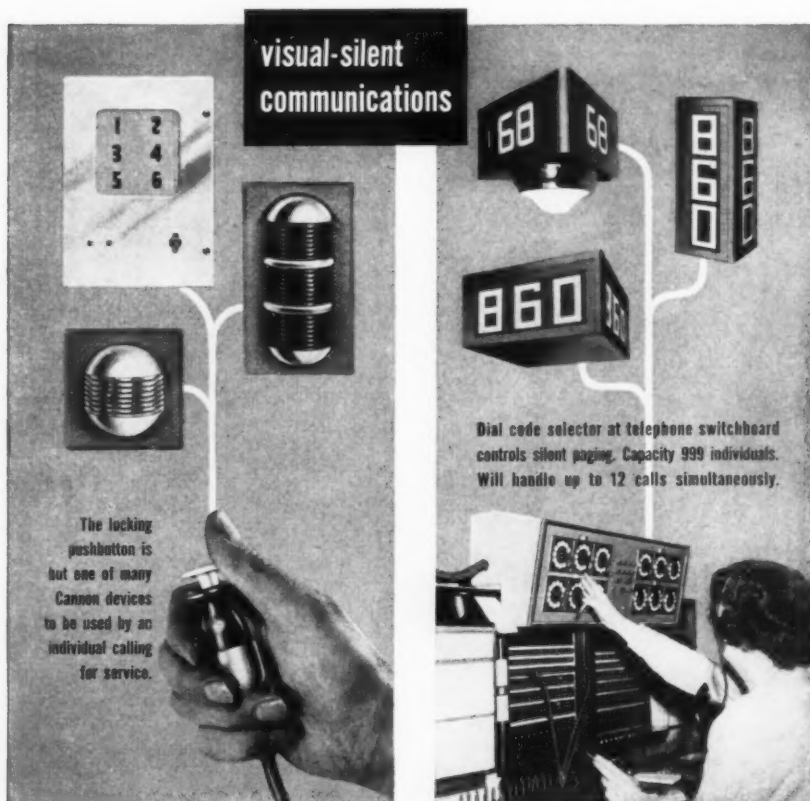
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signal systems

VISUAL-SILENT COMMUNICATIONS for individual service or for general paging purposes have been highly developed by Cannon Electric over a 35-year period.

The Visual-Silent method may be used in conjunction with an audible system if desired. There are many areas where the Visual-Silent system is far superior, such as hospitals, restaurants and department stores or where the noise level is too high for practical operation of an audible system, for instance in machine shops, factories or other production areas.

The two basic approaches to Cannon Electric's Visual-Silent communications are illustrated here. (1) the individual requiring service (below, left) (2) the general paging of numerous individuals in large areas or in a group of buildings (right).



The great diversification of the equipment and the variations of installations to serve many signaling requirements are described and illustrated in our new 32-page bulletin available on request.

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THE RECORD REPORTS

(Continued from page 346)

cuse Museum of Fine Arts, Syracuse.

Nov. 13-15: Convention, Florida Association of Architects — Tallahassee, Fla.

Nov. 18-20: Correlation Conference on "Housing and Building in Hot-Humid and Hot-Dry Climates," sponsored by Building Research Advisory Board — Washington, D. C.

Nov. 19: 34th Annual Meeting, American Standards Association — Waldorf-Astoria Hotel, New York City.

Dec. 1-6: 20th National Exposition of Power and Mechanical Engineering — Grand Central Palace, New York 17, N. Y.

Dec. 5-Jan. 25: National Competitive Exhibition, American Drawings, Watercolors and Prints 1952 — Metropolitan Museum of Art, Fifth Avenue at 82nd Street, New York 28, N. Y.

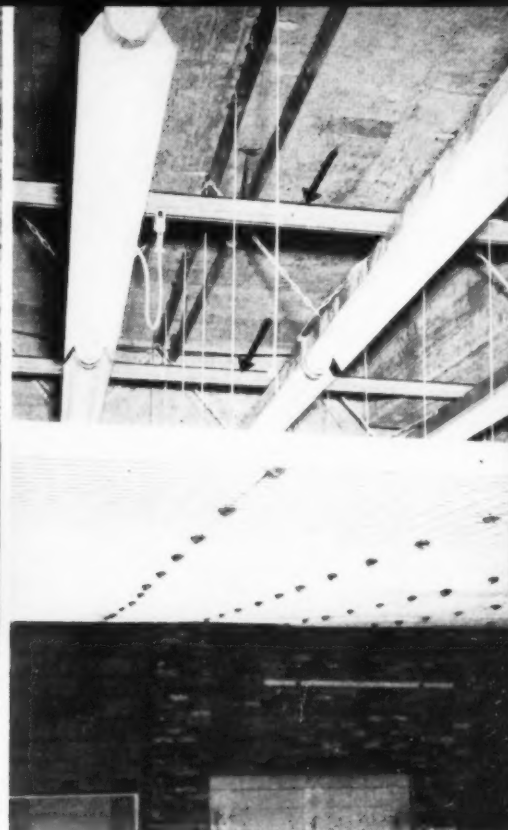
Dec. 17-Feb. 15: De Stijl, a large exhibition of painting, sculpture, architectural models and designs and furnishings executed by the members of the movement which began in Holland in 1917 — Museum of Modern Art, 11 W. 53rd St., New York City.

OFFICE NOTES

Offices Opened

- Herman Fernau has opened an office at 138 Roseland Drive, West Palm Beach, Fla., for the practice of architecture and interior design.
- Victor Gruen, A.I.A., has opened New York offices at 31 West 12th Street.
- Harley H. Johnson has announced the opening of his new office for the practice of architecture, which will be located temporarily in his home at 4600 Glenwood Avenue, Minneapolis 5, Minn.
- Carroll S. Rankin, Architect, has opened a new office at 314½ South Ashland Avenue, Lexington, Ky.
- Lloyd Ashley Rasmussen, A.I.A., has announced the opening of his new offices

(Continued on page 354)



1. YES, TRUMBULL'S LTG FLEX-A-POWER is the most advanced way of solving low-voltage distribution problems yet devised. No matter what the building layout FLEX-A-POWER is completely adaptable to your plans. Across the ceilings

in a modern department store, like the one above, its unique functional design easily makes possible a concealed current supply for lower-cost installation and greatest flexibility in use.

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FLEX-A-POWER®—Trumbull's pre-fabricated plug-in or trolley busway—is designed to meet today's needs, tomorrow's changes



2. POWER TOOLS PLUG IN WHERE THEY'RE NEEDED, not just where the wall outlet is located. Power tools as well as lights in this machine shop get their power supply from the LTG line above. LTG FLEX-A-POWER serves equally well on



assembly lines, crane and hoist installations, and of course can supply lighting of any kind in plant or office (see above). LTG FLEX-A-POWER is rated 50 amps at 300 volts a-c or d-c. Comes in 2-, 3-, or 4-pole construction.

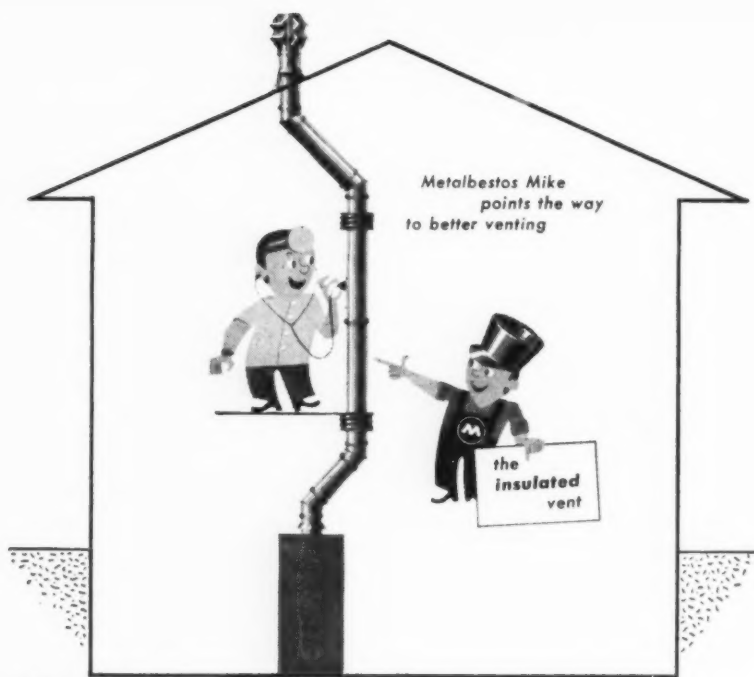
Write for circular TEC-3 on LTG FLEX-A-POWER. Trumbull has FLEX-A-POWER of other types for every distribution need from service entrance to low-voltage appliances.

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Be sure of a **HEALTHIER HOME** WITH METALBESTOS GAS VENT

Every home — regardless of cost — should have the benefits of safer, more efficient gas venting.

Metalbestos' insulated double wall construction assures clean, fresh air—free of fumes and musty odors—throughout prolonged operation of gas appliances. It gives maximum protection to walls, draperies and furnishings against damage caused by moisture condensation.

Special precision-formed couplers make possible accurate, fast assembly—cut installation costs—and provide tightly sealed joints. All aluminum construction eliminates cracking and prevents deterioration from the corrosive effects of flue gases.

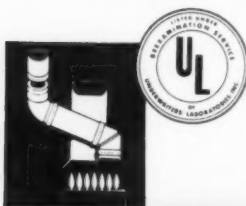
Specify Metalbestos — protect yourself against complaints or costly repairs due to improper venting—give your clients the finest in venting protection.



Send for **FREE VENTING MANUAL**

This useful manual, "Venting of Gas Appliances," contains important rules and helpful tips on approved venting practices. No cost or obligation.

Write today to Dept. L



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DIVISION

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THE RECORD REPORTS

(Continued from page 350)

in his own building, 1636 Bush Street, San Francisco.

- Henry A. Rippelmeyer, A.I.A., has opened an office for the practice of architecture at 943 Harden Street, Columbia 5, S. C.

New Firms, Firm Changes

- The firms of Clemmer & Horton, Architects, and Deitz A. Rudisill, Engineer, have been merged into a partnership to practice architecture and engineering under the firm name of Clemmer, Horton, Rudisill and Associates, Architects and Engineers, Hickory, N. C.

- The firm name of Coolidge Shepley Bullfinch & Abbott has been changed to Shepley Bullfinch Richardson & Abbott — Henry R. Shepley, Francis V. Bullfinch, Joseph P. Richardson and Lewis P. Abbott. Offices of the firm will continue at 122 Ames Building, Boston.

- Peter Copeland and Adolph Novak, Architects, have announced the formation of a new firm to be called Copeland, Novak and Associates, which will combine the organizations they formerly headed as individual practitioners. Lawrence J. Israel, who has been associated with Mr. Copeland for six years, is also a partner in the firm. Offices are at 42 East 51st Street, New York 22, N. Y.

- W. W. Keenan has been named administrative assistant to the president of the Leo A. Daly Company, Architects and Engineers. The announcement was made in Omaha by Leo A. Daly Jr., head of the firm, which also has offices in St. Louis and Seattle.

- Howe & Foster, Architects, have announced that J. Rowland Snyder has joined their partnership for the practice of architecture under the firm name of Howe, Foster & Snyder, with offices at 1636 Connecticut Avenue, Washington 9, D. C.

- Three former associates in Magney, Tusler and Setter, Minneapolis architects and engineers, have been made

(Continued on page 354)

OAK FLOORING IS WANTED BY THOSE BUYING LOW-COST HOMES



Real estate agents are reporting that prospects for low-cost homes will sacrifice many features for "price", but that the majority insist upon oak flooring. Homeowners know that only oak provides those basic features every home needs: durability, economy and "healthfulness."



And now, by laying oak flooring on screeds set in mastic, architects can specify oak and still keep within low-cost building budgets. Using this method of laying oak over concrete slab has proved popular throughout the country and has been approved by FHA.*



Prospects for low-cost housing are especially aware of the fact that oak is the only flooring that permits them to use any color scheme or style of decorating. All furniture goes well with oak flooring—another reason 85% of all prospective homeowners want oak flooring.

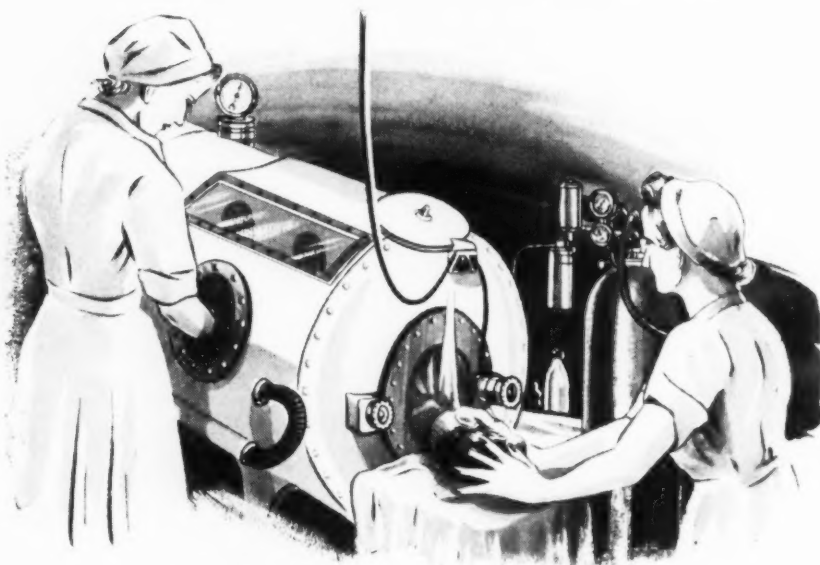


Oak flooring is wanted

because it is adaptable, durable and economical

*SEND TO NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION, STERICK BLDG., MEMPHIS 3, TENNESSEE, FOR FREE INSTRUCTIONS FOR LAYING OAK OVER CONCRETE

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ONAN *Emergency* Electric Plants Assure Light and Power

Emergency electricity for such essential equipment as "iron lungs," operating room lights, and heating systems is a *vital* need.

This power must be immediately available, it must be dependable, and it must have sufficient capacity to handle *all* essential lighting and electrically operated equipment.

Onan engine-driven emergency electric plants meet all these requirements. When storms, floods, fires or breakdowns interrupt the electric power supply, Onan Standby plants start automatically and feed electricity to critical points. The plants stop automatically when regular power is restored. Will run continuously if necessary.

Onan Emergency Electric Plants are available from 3,000 to 35,000 watts A.C. to meet the needs of any hospital. Where power requirements are greater than 35,000 watts, two or more Onan units can be combined into a system with the required capacity.



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Available with exterior housing, like the one shown, or without. All come complete with necessary controls and instruments, ready for installation. Automatic line transfer controls are available for all units.

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Air-cooled: 1,000 to 3,500 watts AC
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THE RECORD REPORTS

(Continued from page 354)

partners in the firm — Stowell D. Leach, John Lindstrom and John R. Magney. The firm name will not change.

• St. John & Platt, Consulting Engineers, announce the admission to partnership of Raymond C. Carlson, P.E., as resident in charge of a new office which has been opened in Buffalo, at 627 Genesee Building. The firm will continue to engage in the practice of consulting engineering under the firm name of St. John, Platt & Carlson, with the Binghamton, N. Y., office remaining at 212 Kresge Building.

• Donald J. Stewart, Vancouver, Wash., and K. E. Richardson, Portland, Ore., have announced the formation of a partnership to be known as Stewart & Richardson, Architects, with offices in Vancouver at 222 Central Building and in Portland at 219 Southwest Stark Street.

New Addresses

The following new addresses have been announced:

O. Kline Fulmer, Architect, 3 Ober Rd., Princeton, N. J.

Roy S. Johnson, Architect, 48 Quarropas St., White Plains, N. Y.

Eugene D. Sternberg, Architect, 2434 East Third Ave., Denver, Colo.

Theodore J. S. Tillack, Architect, 473 Wilson Ave., Paramus, N. J.

ELECTIONS APPOINTMENTS

• Clifford F. Rassweiler of Johns-Manville Corporation has been appointed by the National Research Council as chairman of the *Building Research Advisory Board*, succeeding Frederick L. Hovde, president of Purdue University.

In other BRAB appointments, Douglas E. Parsons of the National Bureau of Standards has been appointed chairman of the Executive Committee and Harold M. Sylvester has succeeded Reginald W. Holt as director of field service.

(Continued on page 360)

Chairs or Chocolates...



Crown Furniture Co. Skylike provides an easily-maintained, high-level incandescent lighting system for the Crown Furniture Company's new Detroit store. 100 foot candles were required to overcome the daylight pouring in both glass-walled ends of the showroom, yet individual area intensities may be modified for special effects by simply changing lamp sizes. Floor-level relamping with pole-type changers offers maintenance savings by eliminating the use of ladders or disturbing the floor displays.

SKYLIKE lighting shows off merchandise at its selling best.

Loft Candy Shops — As a part of its progressive modernization program, Loft has specified Skylike units as the primary light source in its stores. Experience showed that incandescent light presented its fine chocolates and other candies in the most appealing manner. Careful tests were made by Loft executives to assure them that Skylike's diffused radiation eliminated the heat problem at the display level. The view at left is of Loft's new White Plains store.

How SKYLIKE blends 2 types of Lighting Units into 1

SKYLIKE systems for stores are flexible and easy to plan. Modular 24" x 24" units can be recessed, semi-recessed, or surface mounted. They require low initial investment, too — cost only ½ to ⅓ as much as other equipment delivering comparable results.

Note these additional SKYLIKE advantages: high-maintained light output; softly diffused shadows; warm color values; instant starting; floor-service re-lamping; variable lamp size (150-to 500-watt).

Try SKYLIKE on your next lighting installation.



2. The modern look of fluorescent-type troffers.



SEND FOR COMPLETE DETAILS

SKYLIKE LIGHTING, INC. — A Silvray-associated company
102 West Main Street, Bound Brook, New Jersey

Gentlemen:

Please send me further information on Skylike lighting.

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Firm _____

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A "Grade A" Armorply Chalkboard installation in the new Holmes School, Darien, Conn. Architects: Ketchum, Gina & Sharp. The fabric-covered cabinet doors are made of Weldwood® Plywood... another product of United States Plywood Corp.

Up front in its class...
and in more ways than one...

ARMORPLY® CHALKBOARD

When Ketchum, Gina & Sharp designed the new Holmes School in Darien, Conn., they "went modern" in every sense of the word... including the material for chalkboards. They specified Armorply.

Armorply Chalkboard® is more than a fine writing surface, it's also a magnetic bulletin board... highly important in these days of visual-aid teaching methods. It serves you *in two ways*... at the same time... at the one cost!

What's more, Armorply Chalkboard has these other qualities.

Takes chalk beautifully. Finish is easy to write on... easy to clean off. Never chokes. Never needs resurfacing.

Gives maximum readability. Chlorophyll-green color, selected by color experts after exhaustive research, means high reflectivity and light intensity values. Easier on the eyes, too.

Makes notice posting easy. Eliminates broken nails, thumb-tacking, difficult removal. Small permanent magnets hold notices firmly to Armorply's porcelain-on-steel surface.

Never needs refinishing. Durable Armorply won't warp, buckle, explode, shatter or break. Never needs repair or replacement. Less trouble. Lower maintenance costs.

Guaranteed for life of building. If you're planning a new school building or the modernization of an old one, for lasting satisfaction... longer service... lower costs... select research-developed, classroom-tested Armorply Chalkboard. Get the full details. Write for additional information... today.



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World's Largest Plywood Organization

*Porcelain enamel surface is a product of the Bettinger Corporation
Armorply Chalkboard is sold only by distributors.

THE RECORD REPORTS

(Continued from page 358)

- Howard Robertson has been elected president of the *Council of the Royal Institute of British Architects* for the session of 1952-53. Past presidents are Harry Stuart Goodhart-Rendel and Michael Theodore Waterhouse.

Members of the Council are: Frederick Gibberd, Basil Spence, Charles Hebert Aslin, Prof. Sir Leslie Patrick Abercrombie (1950 A.I.A. Gold Medalist), Robert Joseph Gardner-Medwin, Leonard Cecil Hewitt.

Associate members named: Donald Evelyn Edward Gibson, Stirrat Andrew Johnson-Marshall and Richard Alfred Hardwick Livett.

- Joseph T. Lyons has been named director of the Chicago, Ill., office of the *Federal Housing Administration*. Mr. Lyons, assistant director in Chicago since 1948, has been acting director since the death in May of Edward J. Kelly.

- Col. Hubert S. Miller has been assigned as Army Corps of Engineers *district engineer* at Omaha, Neb., replacing Col. Henry J. Hoeffer, who will become commanding officer of the 354th Engineer Combat Group, Fort Lewis, Wash.

WITH THE A.I.A.

- Note for statisticians: attendance at the 1952 A.I.A. Convention June 23-27 in New York as officially compiled: 1063 members and delegates; 609 guests; 35 associates; 177 student associates; 82 members of the press. The total is 1966.

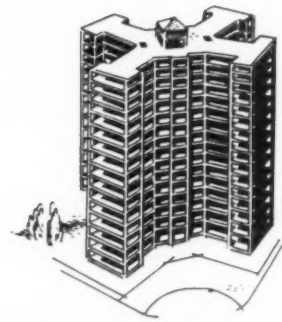
- Speakers at the *Central States Regional Convention* in Kansas City October 9-11 will include Edward D. Stone, Charles Eames, Bruce Goff and Emil Frei. The theme: "Esthetic Evaluation of the Art of Architecture."

- Dissolution of the *Missouri state chapter of the American Institute of Architects* to meet a quirk of the state registration law has been followed by formation of the independent Missouri State Association.

(Continued on page 362)

SAVE STEEL

...and Money, too!



...build with REINFORCED CONCRETE

Here's how to stretch your steel allotments and save steel for national defense. Design your building frames for reinforced concrete. Not only will reinforced concrete save 60 to 65% of your steel but it will also sharply cut the cost of your building. Furthermore, because it is faster to erect, reinforced concrete provides, in many instances, extra months of rental income.

Reinforced concrete frames are inherently firesafe, and withstand wind, shock, and quakes. On your next structure it will pay you to *design for reinforced concrete*.

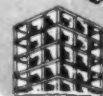
HOW REINFORCED CONCRETE SAVES STEEL



COLUMNS
Use Less Steel



BEAMS
Use Less Steel



Complete BUILDINGS
Use Less Steel

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Finest Hi-Hats on the market... yet competitively priced!



WHEN YOU'RE PLANNING new recessed lighting, be sure to see Amplex Hi-Hats. Just put one of these lighting units alongside any other and you'll insist on Amplex. It's the best looking fixture on the market...looks best because it is best, in design, construction and finish.

Amplex Hi-Hat has a permanent deluxe satin aluminum finish, inside and out... a rolled flanged edge for extra strength and better ceiling fit. The can is deep-drawn to provide uniform thickness and a smooth surface... plaster ring is keyed for perfect aligning... improved louver is more efficient; won't drop out. And on top of all this, Amplex Hi-Hats are today's best dollar value.

Amplex Hi-Hats, Swivelites and Focalites give you an accent lighting line that meets every display requirement and saves real money. Write for the full story about today's fastest-growing line. **Amplex Corporation, Dept. D-10, 111 Water St., Brooklyn 1, N. Y.**

AMPLEX

Sealed-Beam Reflector Lamps, Colorbeam Lamps, Spotlights and Floodlights, Industrial Infra-Red Heat Lamps, Vibration and Rough Service Lamps, Street Lighting Lamps, Traffic Signal Lamps, Incandescent Lamps, Fluorescent Tubes, Display Accessories.

THE RECORD REPORTS

(Continued from page 360)

tion of Registered Architects. Harold A. Casey, A.I.A., of Springfield, Mo., has emphasized that the new organization is in no sense a rival of the A.I.A. "It is the purpose of the Missouri State Association of Registered Architects," Mr. Casey explains, "to promote the registration of all qualified architects, to support the registration law, and generally to promote better relations with public officials and the public generally throughout the state."

- A.I.A. President Glenn L. Stanton of Portland and Alden B. Dow, Midland, Mich., will be among the speakers at the *California State Council of Architects Convention* and the *A.I.A. Sierra Nevada Regional Conference* October 9-11 in Yosemite National Park, Calif. Another speaker will be Bert Stewart Jr., field secretary of the National Automobile Club.

- The *New York State Association of Architects* is making good use of an invitation to submit exhibits of school buildings completed or under construction for the annual convention of the New York State Association of School Boards October 26-28 at Syracuse. The Public Relations Committee of the Association is preparing as "a central and special" feature of the exhibit a panel setting forth the details of the professional service performed by the architect in a school building program.

AWARDS

- Winners of the 10 \$1000 scholarships in civil engineering awarded in the third annual scholarship program of the *American Institute of Steel Construction* have been announced.

Winners were selected from a group of 80 high school seniors nominated by 46 steel fabricating companies in the nationwide contest. A scholarship winner may attend any one of 125 accredited colleges in the country offering a degree in civil engineering.

The winners, and their sponsors, are: Mark Cohen, New York City — Grand

(Continued on page 364)



Who put a bonus on the roof?

It's no mean trick to turn a problem into a bonus. But the owners and builders of New York City's new 27-story Sinclair Oil Building did it. Here's how.

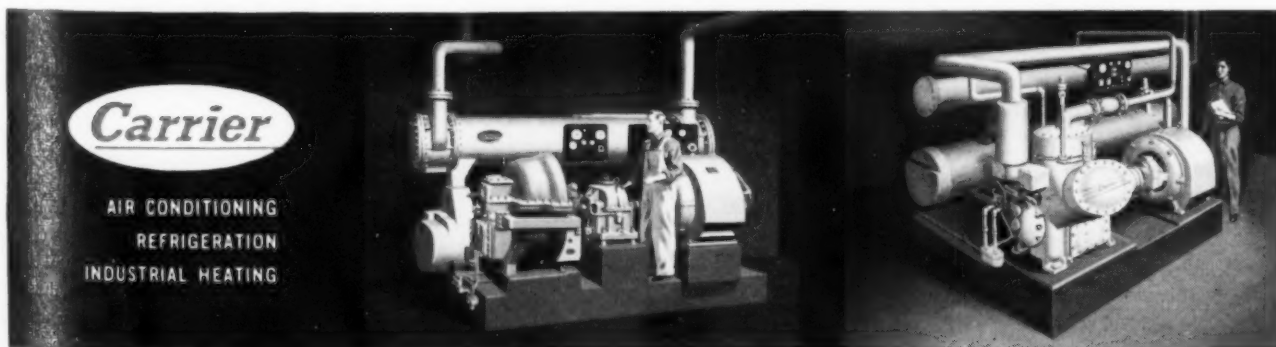
Problem: because there was a bed of solid rock beneath Fifth Avenue and 43rd Street, the cost of blasting for a sub-basement refrigerating plant for air conditioning would have been terrific. **Solution:** Carrier Absorption Refrigerating Machines chill water with steam by absorption. They have no major moving parts and are practically vibrationless. So it was practical to put them on the roof.

Bonus: Instead of long, costly condenser water lines, and pumps with extra horsepower and extra-heavy casings to withstand the hydrostatic pressure of 27 floors which an ordinary basement plant would have required, the roof-top installation used short water lines and pumps with standard casings . . . a clear saving of some \$25,000 on first costs alone!

Another bonus: the Carrier Absorption Refrigerating Machine handles extremely light loads automatically with high efficiency. This is mighty important in a year-round air conditioning system like Sinclair Oil's, where only a small amount of refrigeration will be needed during cool weather.

The Carrier Absorption Refrigerating Machine is built in five sizes, from 115 to 350 tons. Maybe it can help you turn a problem into a bonus, too. The nearest Carrier office will give you all the information you want. Or write for our folder, "Absorption Refrigerating Machines." Carrier Corporation, Syracuse, New York . . . for 50 years — the people who know air conditioning best.

Architects,
Carson & Lardin;
consulting engineers,
Jarvis, Baum & Bolles;
general contractor,
Turner Construction Co.;
owner,
Massachusetts Mutual
Life Insurance Co.;
agent,
Leonard J. Beck, Inc.



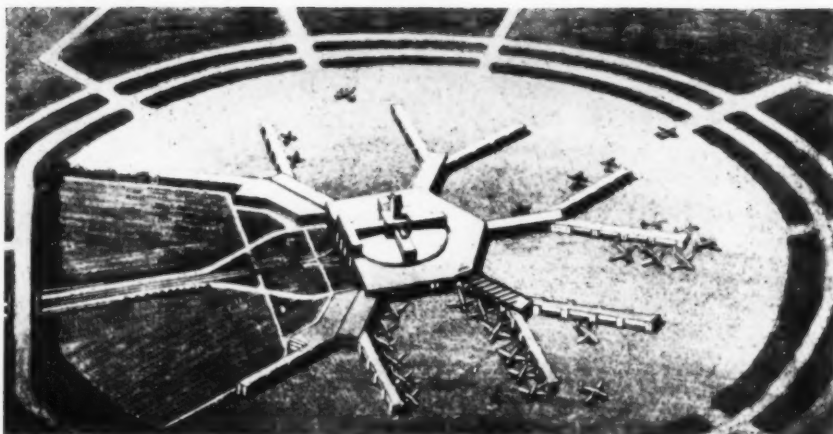
Your particular chilled water system might best be handled by the Carrier Centrifugal Refrigerating Machine.

In many applications, the Carrier Reciprocating Refrigerating Machine — a single package — is the most economical choice.

THE RECORD REPORTS

(Continued from page 362)

Iron Works; Eugene Irwin, Fort Smith, Ark. — Fort Smith Structural Steel Company; Jerry A. Fulk, Decatur, Ill. — Mississippi Valley Structural Steel Company; Ronald A. Massa, Newark, N. J. — Schacht Steel Construction, Inc.; Frank Miall Newcomb, Great Falls, Mont. — Gate City Steel Works; Edward S. Perry, Glen Rock, N. J. —



O'Hare Field Terminal Building at Chicago's new International Airport, Bensenville, Ill., will look like this from the air when all five "fingers" are finished (the first is just about complete). Passengers will board and leave planes from second-story concourse levels while baggage and cargo are loaded and unloaded from first-floor transportation levels. Concourse levels connect with first-floor levels with ten moving stairways and an equal number of stationary stairways. Skidmore, Owings & Merrill are consulting architects on the city of Chicago project.

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Scenery At Its Best

With **SLIDING DOORS...**

WEATHER-PROTECTED BY "ACCURATE"

All over America, home owners have discovered a new freedom, a new enjoyment, by having their residences designed with Sliding Doors. The growing popularity of Sliding Doors has been stimulated by the successful weather-protection insured by "Accurate" metal door saddles, sheaves and fittings. Architects recognize this and are careful to specify "Accurate" for satisfactory performance.



For doors and windows of all types, "Accurate" Metal Weather Strip is unsurpassed. Write for working drawings, or if you prefer

ASK FOR ILLUSTRATED FOLDER

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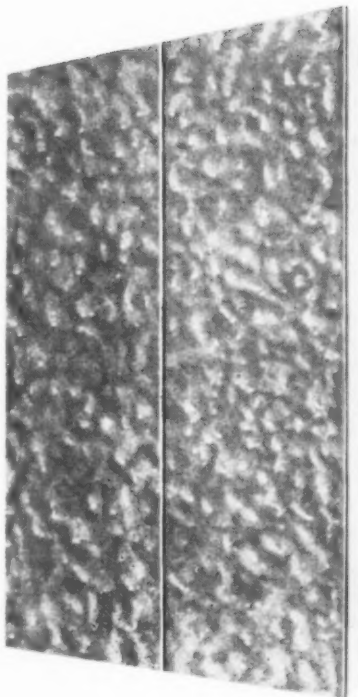
Dreier Structural Steel Company, Inc.; Donald J. Ross, Providence — John E. Cox Company, Inc.; George J. Strom, Oakland, Calif. — Schrader Iron Works; Kenneth B. Wiesner, St. Louis — Stupp Bros. Bridge & Iron Company; Donald Wintringer, Buffalo — August Feine & Sons Company.

• The 1952 Annual Building Awards of the Queens Chamber of Commerce are offered to owners, architects and builders of new buildings in the Borough of Queens, New York City, in a competition which closes October 27.

Buildings substantially completed from Nov. 1, 1951 to Oct. 24, 1952 are eligible. Awards will be presented at the annual dinner of the Queens Chamber of Commerce December 2. Details are available from Building Awards Committee, Chamber of Commerce of the Borough of Queens, 24-16 Bridge Plaza South, Long Island City.

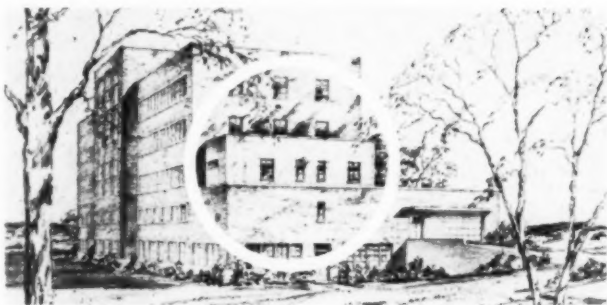
The award program, inaugurated by the Queens Chamber in 1926, is designed to encourage "excellence in design and construction" of new buildings in Queens in eleven different classifications.

(More news on page 368)



NEW CURTAIN WALL PORCELAIN ENAMEL BUILDING PANELS REPLACE HEAVY MASONRY WALLS **SEAPORCLAD** by Seaporcel

ALSO SUPERLATIVE AS AN
ASHLAR OR VENEER



James H. Ritchie & Associates
Architects and Engineers, Boston, Mass.

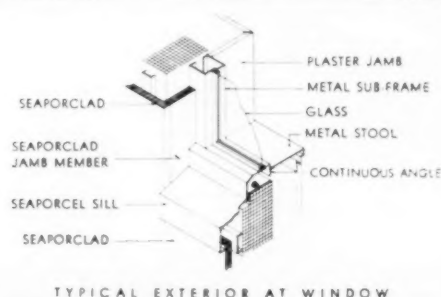
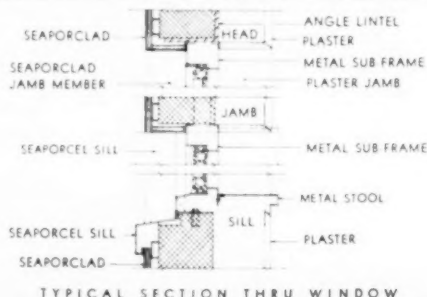
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Seaporclad panels combine most harmoniously with the general architectural design and color scheme of this superb hospital structure.

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Delivered in panels up to 5 ft. x 10 ft., Seaporclad* is extremely light in weight, is easily and economically maintained. Seaporcel Metals, Inc., manufacturers of Seaporclad, has complete fabricating facilities for the porcelain enameled panels as well as the laminating facilities to produce the finished Seaporclad product. This gives you the assurance of a closely controlled product from start to finish.



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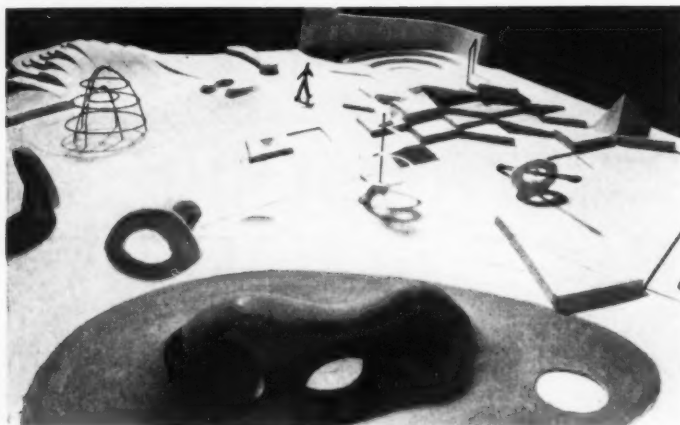
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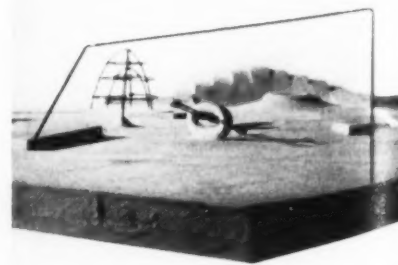
U.N. PLAYGROUND

(Continued from page 22)

jected by New York Park Commissioner Robert Moses, who also serves as liaison agent between the city and the world organization. Mr. Moses urged instead that the type of playground which has been more or less standard in New York be built on the site. After debate and consideration, the U.N. agreed to the Moses proposal.

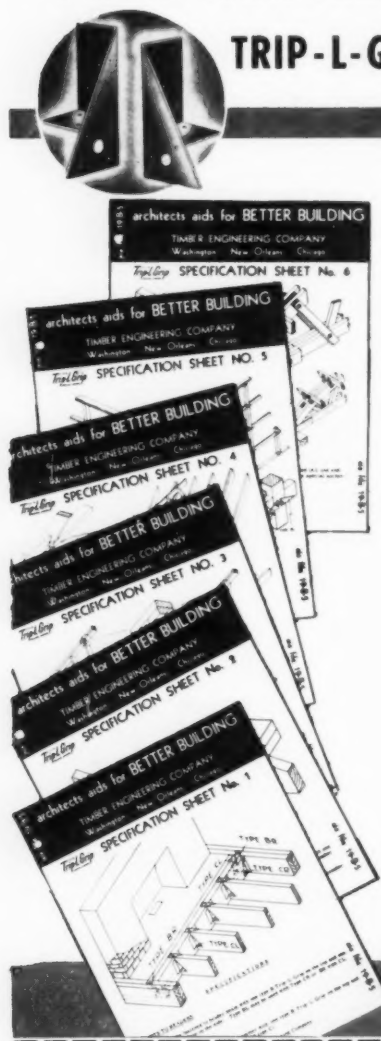
Following the rejection of the Whittlesey-Noguchi scheme, and partly as a result of the interest stirred up by the dispute, plans and a model for the project were exhibited at the Museum of Modern Art. The Museum exhibited the scheme as a "particularly striking illustration of the possibilities of stimulating the child's sense of space and form through a playground designed as architectural sculpture." It further described the playground as "the most creative and imaginative play area idea yet devised." Since then, the material has been exhibited at "Creative Playthings" in New York City and at the National Recreation Congress in Seattle. It has also been requested for exhibit at still other places, and the sponsoring group which proposed it for the U.N. site is now hopeful that it may be built elsewhere.

Voicing the hope that the scheme would be given such a trial, New York's *Herald-Tribune*, in an editorial published at the time of the Museum's exhibit, warmly endorsed the imaginativeness of the project and further commented "indeed we would ourselves like to be among those who try it."



Photos at top of page and above are of model of Whittlesey-Noguchi playground scheme. Figure in top view shows scale

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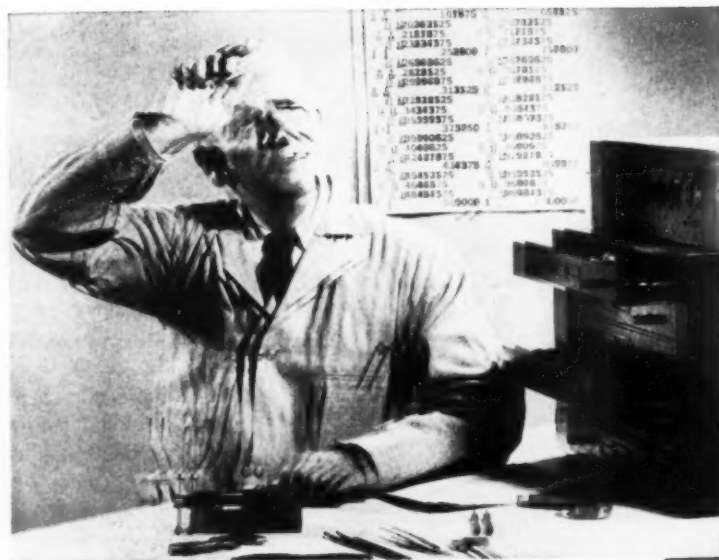
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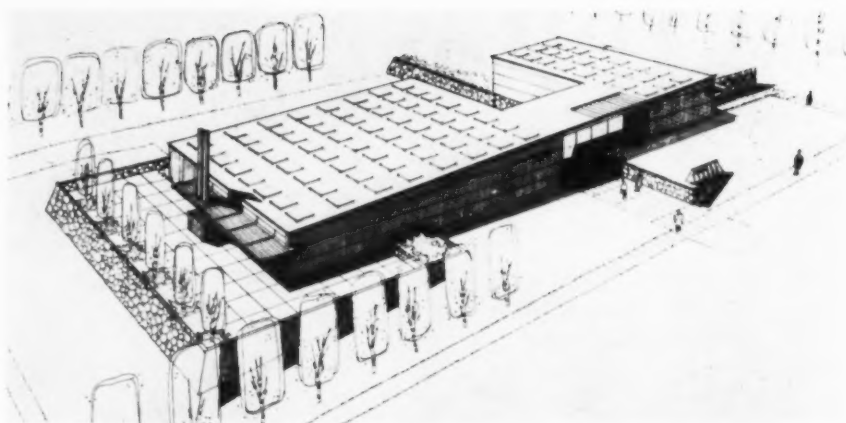
And here is the tag to look for when you buy fluorescent fixtures. It is your guarantee that the fixture has been equipped with G-E Watch Dog no-blink starters.

THE RECORD REPORTS

(Continued from page 364)

LEBRUN AWARD IS GIVEN TO ST. LOUIS ENTRY

The 1952 LeBrun Traveling Scholarship, awarded annually by the New York Chapter of the American Institute of Architects on the basis of a nationwide competition, has been won by Robert E. Entzeroth of St. Louis, Mo.



Sky Highway Starts on *Terrazzo*

This is the TERRAZZO floor of the Administration Building, Greater Pittsburgh Airport. The age of flight thrives on ageless TERRAZZO; countless arrivals and departures can't hurt it.

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Robert N. Chappelle of Philadelphia was chosen as the alternate winner. The award carries a stipend of \$2800 to be used for at least six months' travel and study in Europe.

This year's problem was the design of a public library with complete facilities for a town of 30,000 inhabitants. The competition was judged by a committee headed by J. Bruno Basil, himself a former LeBrun scholar. Other members of the jury included Leopold Arnaud, Robert I. Carson, Randolph Evans, Maurice R. Salo, Thorne Sherwood, Francis St. John and Francis Keally.

In his announcement of the winning entry, Mr. Basil commented: "Mr. Entzeroth's design presented a solution that was imaginative, workable and extremely attractive, despite the difficult problem of a sloping site. His plan included the following striking features: glass entry to the building which formed a dramatic approach to ramps and stairs; top lighting of reading rooms by plastic bubbles for even and shadowless reading conditions; large glass walls from the reading rooms leading to quiet walled gardens; location of lecture and exhibit hall on a lower level adjacent to the parking area, to permit day or evening use without conflict of connection with the rest of the building; and solid wall along the street for privacy and insulation against noise and distraction."

The alternate design was commended for "solving the problem in an attractive manner resulting in a pleasant suburban structure of informal and appropriate design."

Mr. Entzeroth is an honors graduate of Washington University and was also first-prize winner of the 1951 St. Louis Area Home Design Competition. He is the 25th winner of the scholarship, first awarded in 1912.

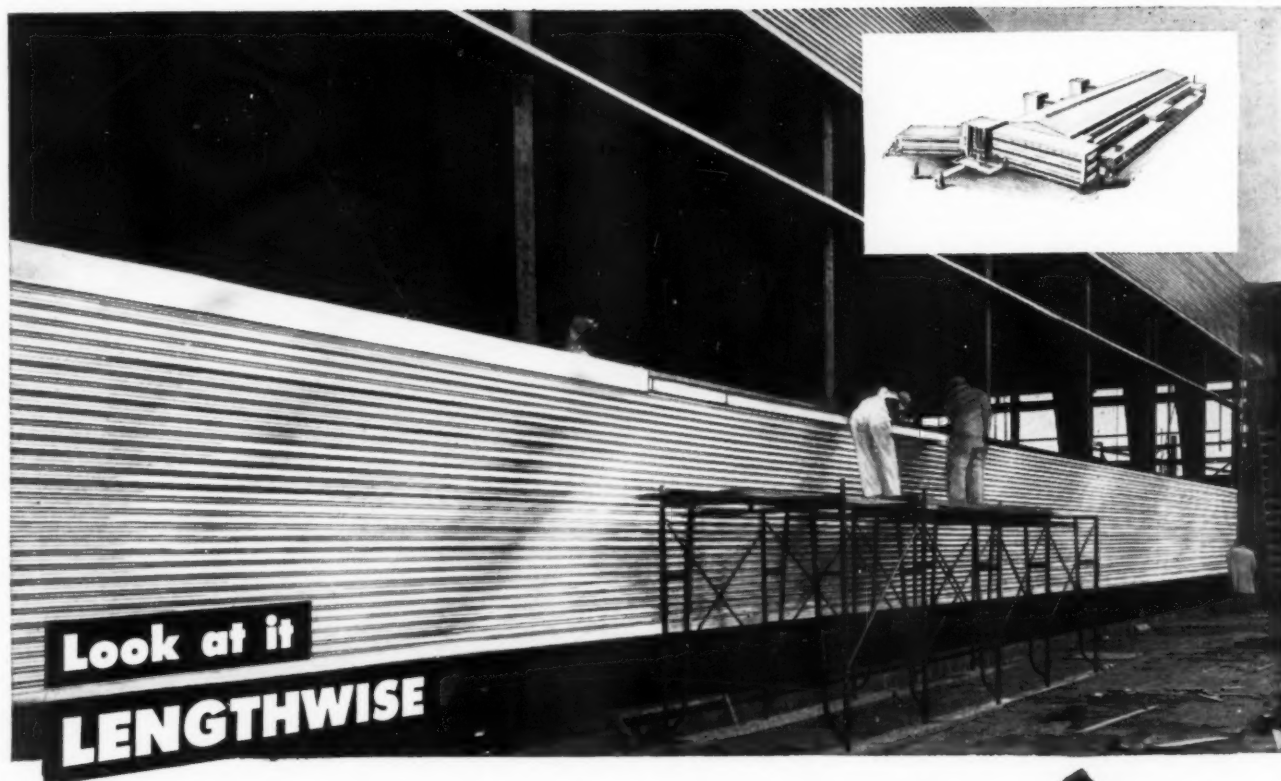
(More news on page 370)

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Call Reynolds for literature and technical assistance... offices in principal cities. Check your classified phone book for our listing under "Building Materials," or write to Reynolds Metals Company, Building Products Division, 2015 South Ninth Street, Louisville 1, Kentucky.



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Military demands for aluminum limit supply, but Reynolds is rapidly expanding aluminum capacity. Rated orders receive priority handling.

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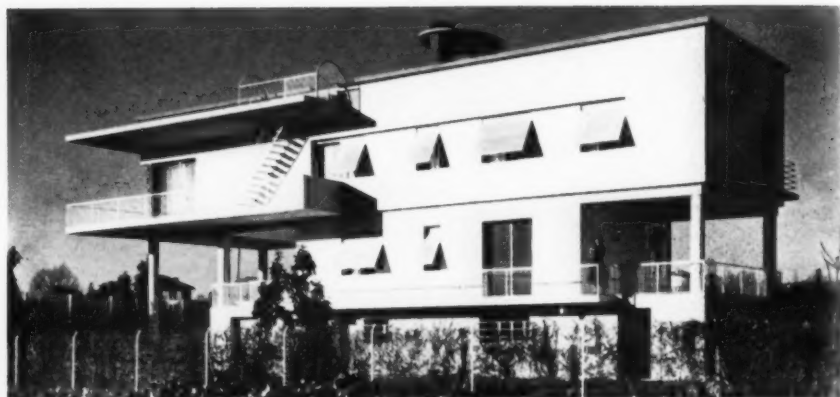
THE RECORD REPORTS

(Continued from page 368)

ITALIAN HOUSE COMBINES RESIDENCE AND STUDIOS

*Furnishings and Paintings
Designed by Architect*

The house shown here, completed in February 1952, at Imola, Italy, at the foot of the Roman Appenine Mountains,



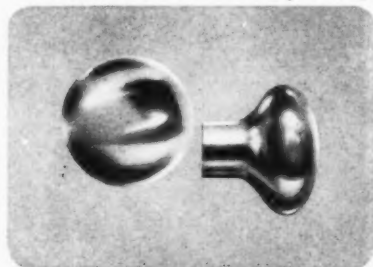
Italian house seen from side, above and from front, bottom of page. Studios are on first floor, apartment above.

FACTS you should know about practical, popular **NATIONAL LOCKset** Patent Applied

Here are shown just two of the many reasons why architects, builders, contractors, carpenters and home owners are saying "Make it NATIONAL LOCKset".

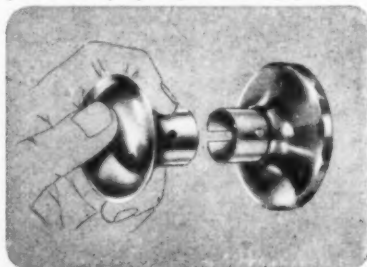
handsome one-piece knob of wrought brass

Exquisitely-styled, wrought brass knob. Formed as one piece. Mirror-like finishes protected by long-term varnish. Knob fits the hand perfectly.



knob separate from key and lock mechanism

Forcing knob with tool will not open locked door. Knob absolutely separate from lock mechanism... Held in position by spring retaining pin.



combines professional studios and living quarters.

Designed by Architect M. G. Dal Monte, the building is constructed of iron, cement and glass. The principal entrance and the studios are on the ground floor. The entire apartment, including kitchen and service facilities, occupies the second floor.

General furnishings, furniture, carpets and ceramics were designed by the architect, who also painted large murals for the interior. Walls and ceilings are painted in various shades of tempera colors, including white, gray, cobalt blue and red. Supporting elements are also painted red.

Inside staircases are of marble, with railings of black iron tubing. All outside sash and fittings are of non-corrosive materials. The main entrance door and all inside doors are of natural chestnut boards. Floors are of oak boards and ceramic mosaics.

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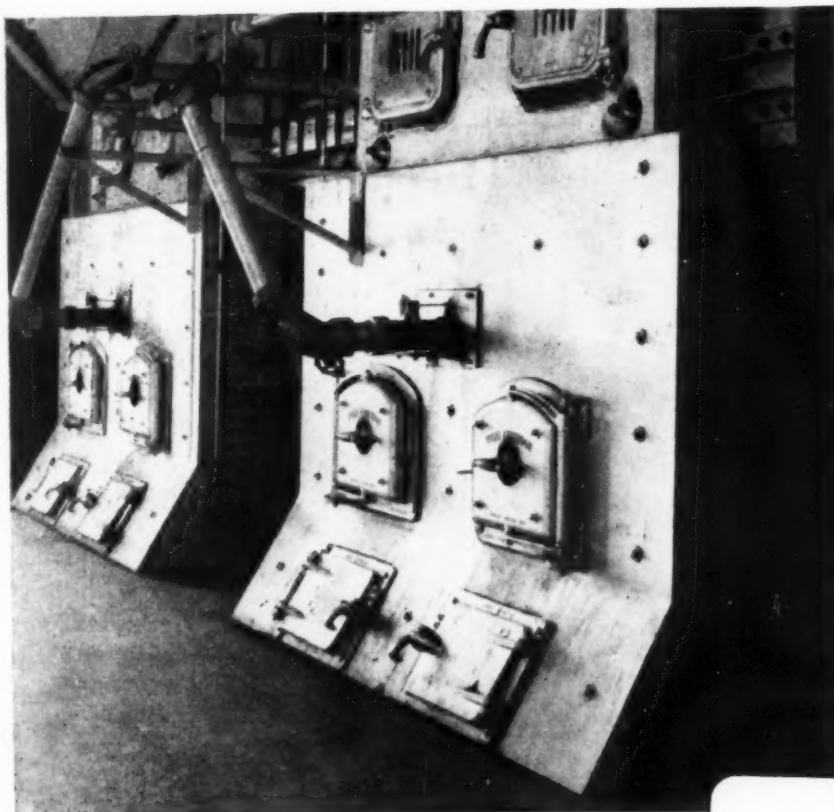
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(More news on page 372)

HOW A SMALL PLANT SAVES BIG MONEY— BY BURNING COAL THE MODERN WAY!

"Modernizing our coal installation cut monthly fuel bills from \$777 to \$650...labor costs from \$120 to only \$40!"



**says Mr. William C. Musch,
Chief Engineer, Allen Memorial
Hospital, Waterloo, Iowa.**

Here's Allen Memorial Hospital's new steam plant. Boilers are fired by pneumatic spreader stokers. The plant now operates with $\frac{1}{3}$ the manpower formerly needed. Compared to the old installation, the new equipment saves 18¢ on every thousand pounds of steam generated. The savings realized by this small plant will pay for the entire installation in 7½ years.

● Whether you plan to modernize your steam plant, or build a new one...whether you burn a lot of fuel, or a little...you can cut a *big* percentage from your operating costs by using up-to-date coal equipment.

A consulting engineer can show you how you can cut labor costs to a minimum with automatic coal-and ash-handling equipment...how you can get more steam for every dollar when you burn coal in a modern installation designed to meet your *specific* needs.

Of all fuels, only coal has ample reserves for the future. And to produce this coal, America has the world's most efficient coal industry. That means that coal users, unlike those committed to other fuels, get the advantages of dependable supply and relatively more stable prices—now and for the future!

If you operate a steam plant, you can't afford to ignore these facts!

- COAL** in most places is today's lowest cost fuel.
- COAL** resources in America are adequate for all needs—for hundreds of years to come.
- COAL** production in the U. S. A. is highly mechanized and by far the most efficient in the world.
- COAL** prices will therefore remain the most stable of all fuels.
- COAL** is the safest fuel to store and use.
- COAL** is the fuel that industry counts on more and more—for with modern combustion and handling equipment, the inherent advantages of well-prepared coal net even bigger savings.

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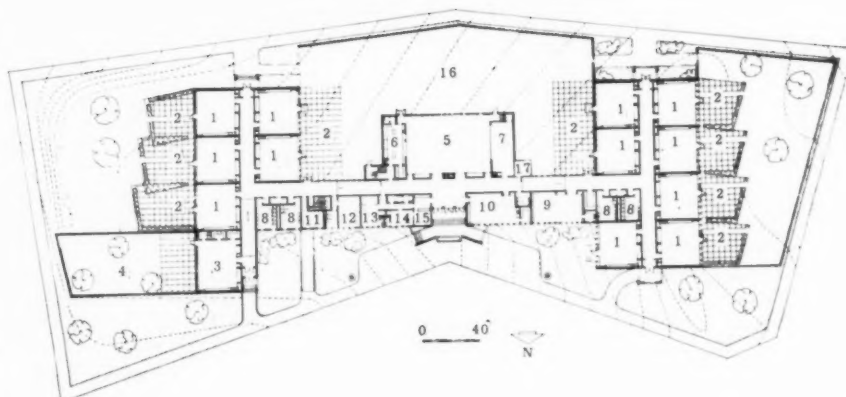
THE RECORD REPORTS

(Continued from page 370)

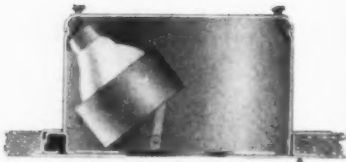
NEW SCHOOL PLANNED FOR INDOOR-OUTDOOR CLASSES

Cranston, R. I., School First In Extensive Program

The first structure has been completed in a multi-million-dollar school building program now under way in the city of Cranston, R. I. Known as the Eden



Key to plan, above. 1, Classrooms; 2, Outdoor Classroom Areas; 3, Kindergarten; 4, Play Yard; 5, Cafeteria; 6, Kitchen; 7, Stage; 8, Rest Rooms; 9, Library; 10, All-Purpose; 11, Storage; 12, Teachers' Room; 13, Health; 14, Principal; 15, Office; 16, Playground; 17, Men Photo, below, shows entrance



Century's #396 recessed accentlight offers three basic advantages: (1) it is easily adjustable in any direction up to 45 degrees from vertical; (2) combined louver-holder accepts color filters, spread lenses (or both) and adjusts with lamp; (3) everything is out of sight — the exposed bottom of the unit is perfectly flush with the ceiling plane ... uses highly efficient side-prong PAR lamps; hinged plate for instant access; prime coat finish ... ideal choice where maximum flexibility is desirable from a completely concealed unit

(#396 uses 150 watt lamp;
#397 uses 200 watt)

CENTURY LIGHTING, INC., 521 WEST 43RD STREET, NEW YORK 36
626 NORTH ROBERTSON BOULEVARD, LOS ANGELES 46



Park School, the structure was designed by Creer, Kent, Mather, Cruise & Aldrich, architects. It will accommodate between 450 and 500 pupils from kindergarten to sixth grade.

Twelve classrooms are provided in addition to the kindergarten and each opens on an outdoor area which may be used either for instruction or recreation. The kindergarten has its own enclosed play yard and also features specially-designed, scaled-down equipment. Each of the classrooms has a drinking fountain, wash basin, clothes closet and storage facilities. The lower and upper grades occupy separate wings, and offices and services are concentrated in the central portion of the building.

Corridors are provided with steel gates, recessed in the ceilings, which can be used to close off the classrooms when the building is used for community functions. The exterior is of stone, brick and glass bloc.

(More news on page 371)



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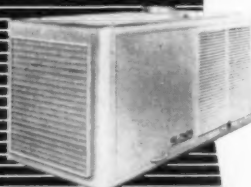
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There's more comfort for working or selling areas when one or several Reznor units manufacture and circulate warm air in winter ... dead air in summer. Propeller and blower types. New catalog gives complete data and specifications.



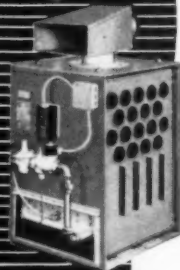
UNIT/CENTRAL HEATER

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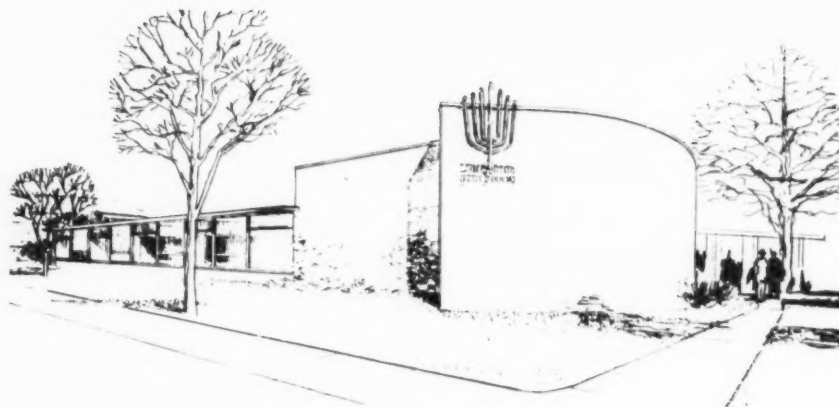
THE RECORD REPORTS

(Continued from page 372)

PARK FOREST SYNAGOGUE PLANNED FOR EXPANSION

*Community's Fifth Religious
Building to Cost \$90,000*

Plans for the construction of a temple which is to cost in the neighborhood of \$90,000 have been announced by officials of Congregation Beth Shalom of the



Sketch shows proposed Park Forest Synagogue, planned for later expansion. Classroom wing is at left.

MAIN KITCHEN



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large or small • Van kitchens make better use of space

- Every pastor, school official or architect with a kitchen equipment problem will be interested in how St. Peter in Chains Church and School, their architects and Van turned an auditorium into kitchen, refectory and snack room that serves 225 school lunches daily and creates an active social center.
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- New kitchen or modernization, use Van's century of experience.

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new planned town, Park Forest, Ill. (ARCHITECTURAL RECORD, May 1951, pp. 93-110).

Designed by Loeb, Schlossman & Bennett, architects and planners of Park Forest, the building will be the community's fifth religious structure. Others include the St. Ignace Roman Catholic school and rectory, Trinity Lutheran Church, United Protestant religious education building, and — now under construction — the Episcopal Church of the Holy Family.

Provisions for Future Growth

Discussing the plans for the new synagogue, Architect Richard Bennett has pointed out that the building's design "recognizes a modest beginning planned for inevitable growth," and in this respect offers a solution to the typical problems of a growing community.

The building's classroom wing can be extended northward, and in the future a foyer is to be added which will connect the classroom wing to a large social room and sanctuary, at the same time creating a forecourt and an enclosed garden.

Planning for the building in its initial stages is likewise flexible. Folding partitions will enable classrooms for religious instruction to be thrown open into the space reserved for religious meetings, extending the seating capacity of the latter to 350.

The classroom section will be of frame construction and will be walled with glass. One classroom will double as a kitchen and another as an office. The chapel will have walls of stone, and the memorial Menorah will serve as a lighting fixture in addition to its symbolic function.

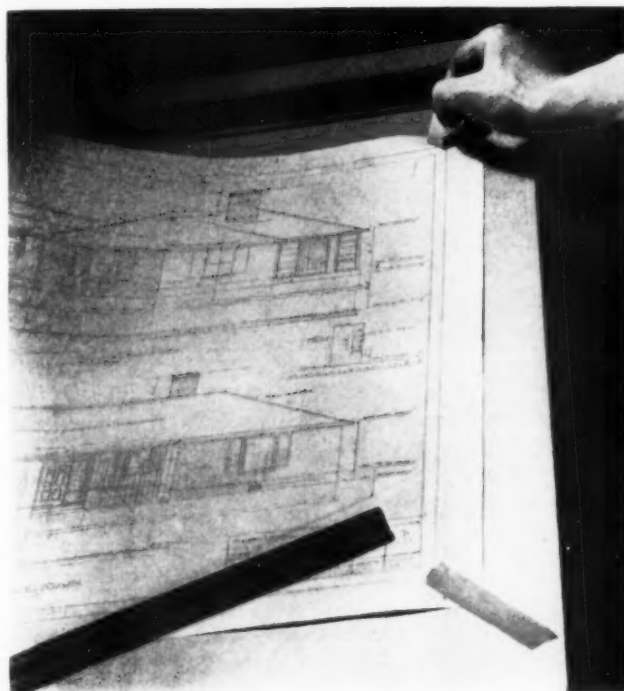
(More news on page 376)

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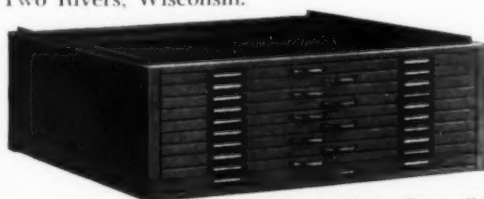


and now what?

Hours of effort and dollars of skilled labor costs have changed a piece of paper into an extremely valuable drawing — *and now what?* The reference value of this sheet is enormous, and its replacement cost is so high that it is nothing more than common sense to protect and preserve it in the best filing equipment available.

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Hamilton Steel Shallow Drawer Unit

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Hamilton Manufacturing Company

THE RECORD REPORTS

(Continued from page 374)

AT THE COLLEGES

Architecture Department Established at Colorado

A degree-granting department of architecture and architectural engineering has been established at the Univer-

(Continued on page 380)

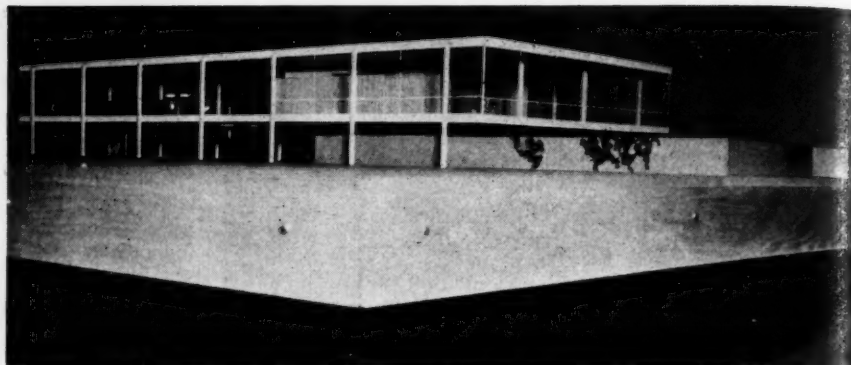


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quiet lift
with Airlift . . .
(Swartwout duct ventilator)**

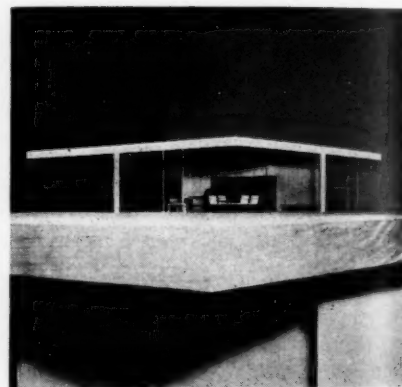


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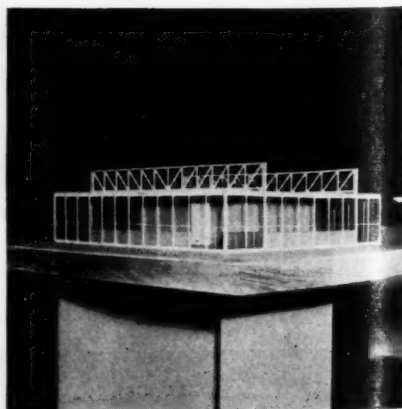
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The Swartwout Co.
Roof Ventilators and Ventilating Louvers
POWER PLANT EQUIPMENT • PROCESS INDUSTRY CONTROLS



Student and faculty work at Illinois Institute of Technology: above, model for an "open-plan" country club designed by David Haid, graduate student in architecture; below, model of "an entirely new kind of residential structure" designed by Ludwig Mies van der Rohe, director of architecture, "emphasizes a structural principle which has complete internal flexibility. The residence has no walls, no built-in partitions, and consequently living quarters can be rearranged according to specific needs"



Edmund Zisook, another graduate student in architecture at I.I.T., designed this model for a community recreational center. It also emphasizes "an absence of internal structure which permits complete flexibility in the arrangement of space"



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IT'S NEW!**

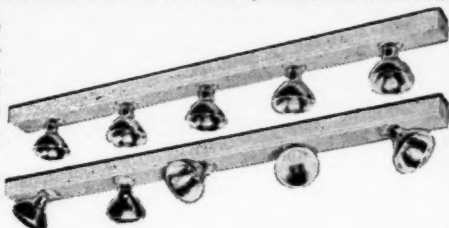
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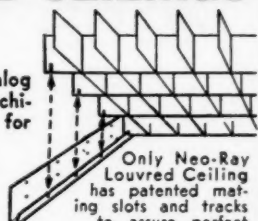
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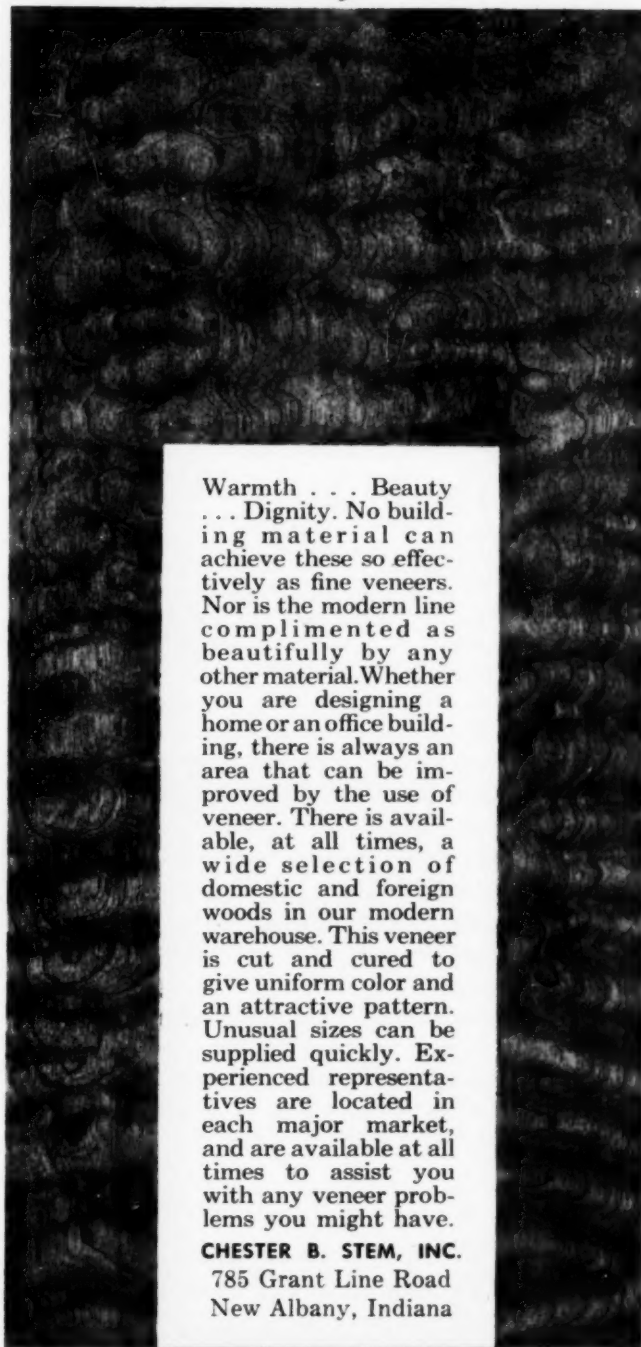
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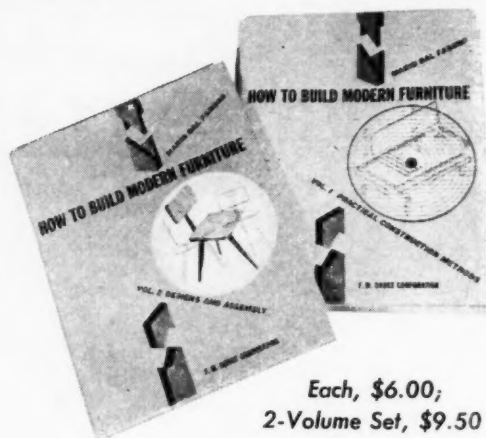
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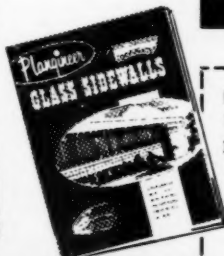
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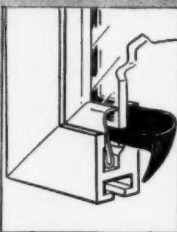


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THE RECORD REPORTS

(Continued from page 376)

sity of Colorado. The new department
is within the college of engineering.

Thomas L. Hansen of the faculty of
Washington State College, Pullman,
Wash., has been named to head the
department.



Thomas L. Hansen, head of the University
of Colorado's new department of archi-
tecture and architectural engineering

Mr. Hansen, who has an M. Sc. in
planning and housing as well as several
degrees in architecture, was from 1942-
1944 senior project planner for the Fed-
eral Public Housing Administration at
Seattle. Otherwise he has been teaching
in colleges and universities since 1934 —
just prior to his Washington State Col-
lege appointment, as head of the depart-
ment of architecture and architectural
engineering at North Dakota Agricul-
tural College.

Washington Combines Rule of Architecture and Fine Arts

Kenneth E. Hudson, dean of the
Washington University School of Fine
Arts since 1938, has been named to the
new administrative post of dean of the
Schools of Architecture and Fine Arts.

As dean of the School of Architecture
he succeeds Joseph D. Murphy, who has
resigned to devote most of his time to
private practice with his firm, Joseph
Murphy & Eugene Mackey.

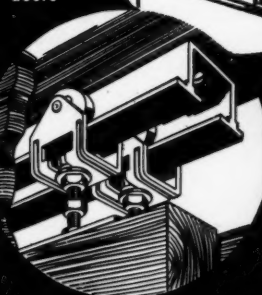
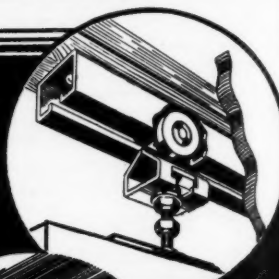
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gle dean is part of a projected plan for
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(Continued on page 384)

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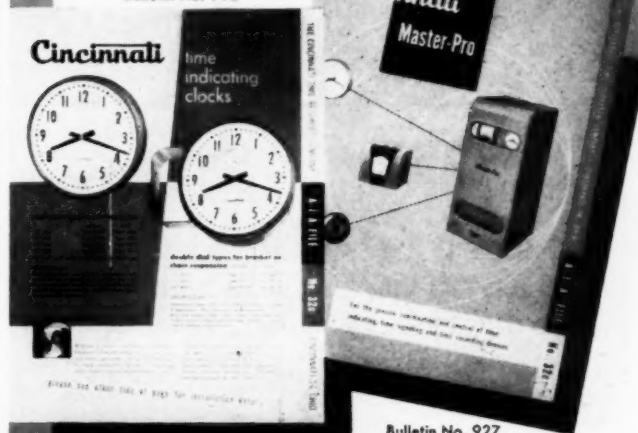
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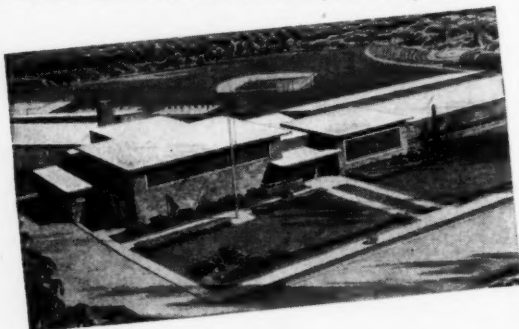
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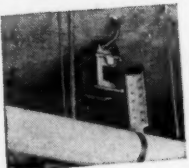
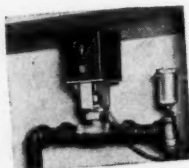
SUBJECT: Oakridge School, Arlington, Virginia.

AUTHORS: ARCHITECTS: Allen J. Dickey and John Graham, Jr., Arlington, Va.
ENGINEER: A. Dee Counts, Wash., D. C.



HEATING CONTRACTOR: W. J. Baumbach, Inc., Arlington, Va.

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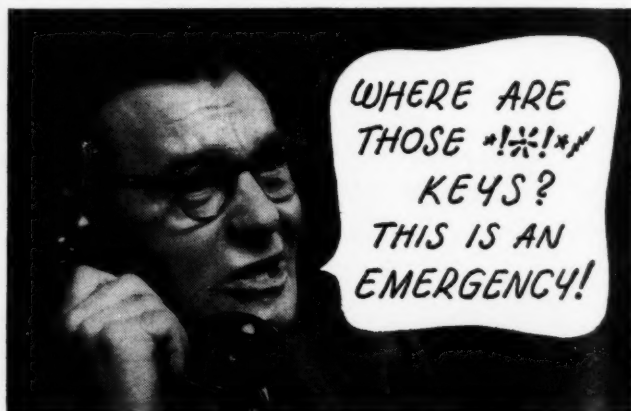
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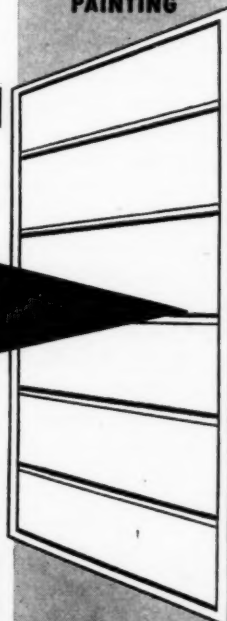
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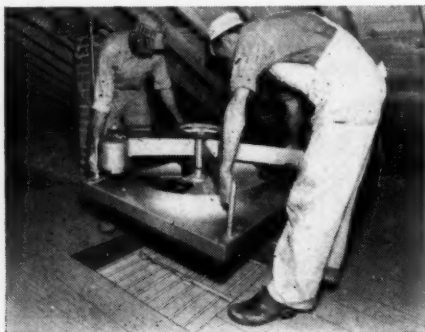
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THE RECORD REPORTS

(Continued from page 380)

have a director; pending those appointments executive committees will direct internal affairs.

For the School of Architecture the Executive Committee includes Professor Emeritus Lawrence Hill, F.A.I.A.; Roland Bockhorst, assistant dean; Associate Professor Robert Oswald, in charge of engineering courses; and Mr. Murphy, who will also teach in fifth-year design during the fall semester.

Awards Announced

- Claes Johan Anders Mellin, Johannesplan 1, Stockholm, Sweden, has been awarded the *Hastings Graduate Fellowship in Architecture* at the University of Illinois for 1952-53. First alternate is Francisco Jose Morales de los Rios de Castro, Lisbon, Portugal; second alternate, Man-Ball Leung, Hong Kong, China.

The Hastings is a new fellowship for architectural graduates with two or more years of practice in a foreign country. It carries a stipend of \$2500 for graduate study at Illinois.

- Two Cornell University undergraduate engineers, Paul J. Wisniewski and David A. Thomas, won first prize of \$200 in the 1951-52 A. F. Davis Undergraduate Welding Awards for their paper "Metal Transfer in Arc Welding," which appeared in the April 1952 issue of *The Cornell Engineer*.

Second prize of \$150 was awarded to Norman Fletcher of the University of Wisconsin for his paper "Arc Welded Machine Jigs" in the November 1951 issue of *The Wisconsin Engineer*.

Winners were selected by the American Welding Society for the sponsor, A. F. Davis, vice president and secretary of the Lincoln Electric Company, Cleveland.

New Courses Planned

- A three-day course in heating, ventilating and air conditioning for architects and their aides will be offered for the first time this fall at the University of Illinois under the joint sponsorship of the departments of architecture and mechani-

(Continued on page 388)

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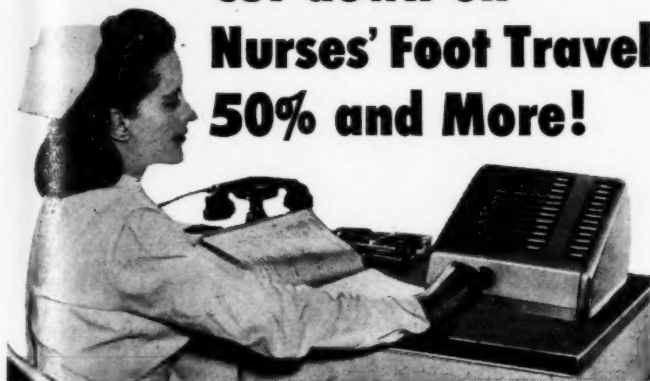
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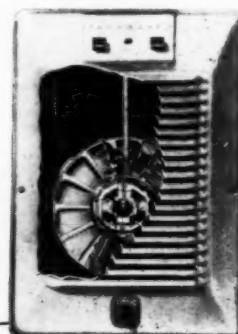
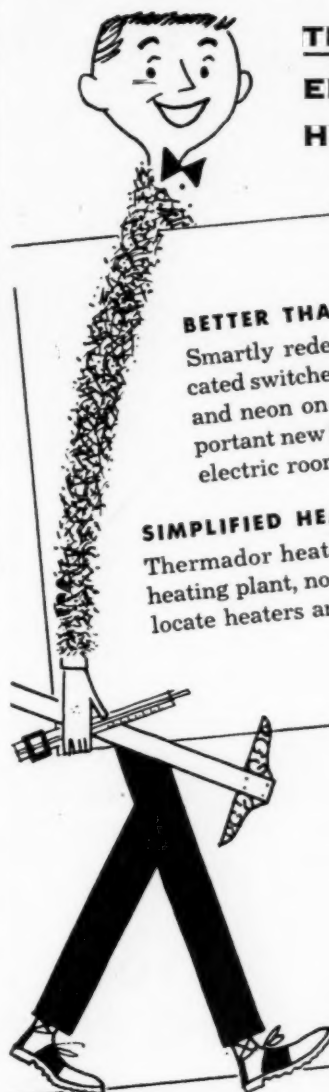
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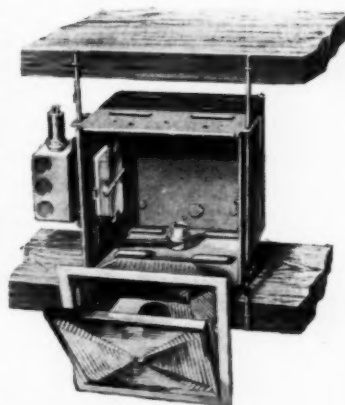
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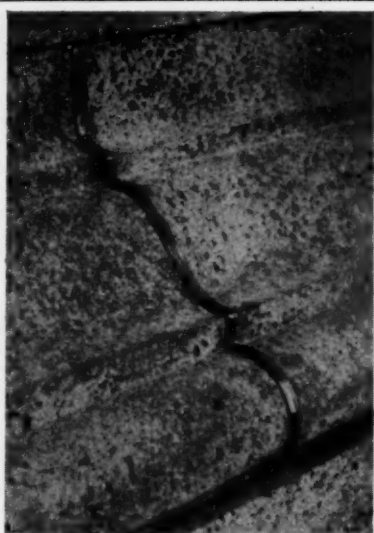
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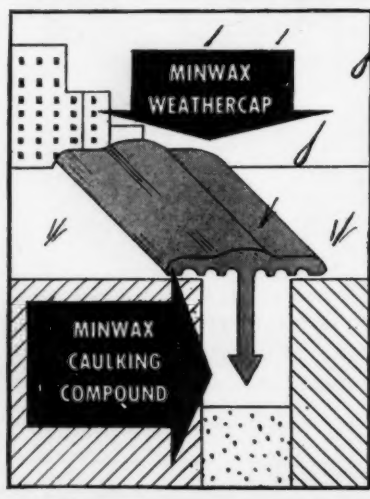
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"Weathercap" is an extruded strip of pure lead. It creates a permanent waterproof seal for masonry joints when embedded in Minwax Caulking Compound, the companion product.

"Weathercap" is easily cut to size on the job. It will not discolor or stain any surface. Its neutral grey color harmonizes with all building materials.

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THE RECORD REPORTS

(Continued from page 384)

cal engineering. Dates: October 29-31.

The idea is to give architects "down-to-earth" information on the most recent developments in heating, ventilating and air conditioning as they influence the design of small buildings. The program will include lectures, conferences and discussion.

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• A two-year training program in planning will be administered by a new center for Urban and Regional Studies set up at the New School for Social Research in New York. A Certificate of Proficiency in Planning will be given upon completion of 12 courses, eight in planning and housing and four in background subjects.

Carol Aronovici is director of the Center, with an advisory committee that includes Charles Abrams, Henry S. Churchill, Albert Mayer, Jose Luis Sert, William Charney Vladeck, Ralph T. Walker, Robert C. Weinberg, Norman Williams Jr., Paul Lester Wiener and Paul Zucker.

EXHIBITIONS

• An exhibition of "French Drawings, Masterpieces from Five Centuries" will be brought to the United States this fall under the auspices of the Smithsonian Institution's Traveling Exhibition Service.

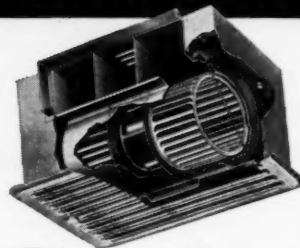
Included in the exhibition, which will be presented first at the National Gallery of Art, Washington, D. C., November 2-30, are 150 drawings from the Louvre and other French museums and private collections, none of them ever shown in this country before. The tour will take the exhibition to Cleveland, St. Louis, Cambridge and New York.

• The Segy Gallery, at 708 Lexington Avenue, New York City, has assembled a comprehensive loan exhibition of African sculpture, its unique specialty. A leaflet on the exhibition is available from Segy.

(Continued on page 392)

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Every **TRADE-WIND** Clipper Ventilator carries a five-year pro-rata guarantee to the original owner. The warranty is printed on a prominent card attached to each unit and specifies that during the five-year period repairs or replacements are made by the factory on a pro-rata basis—the first year the entire cost is borne by the factory, the second year 4/5 of the cost, and so on.

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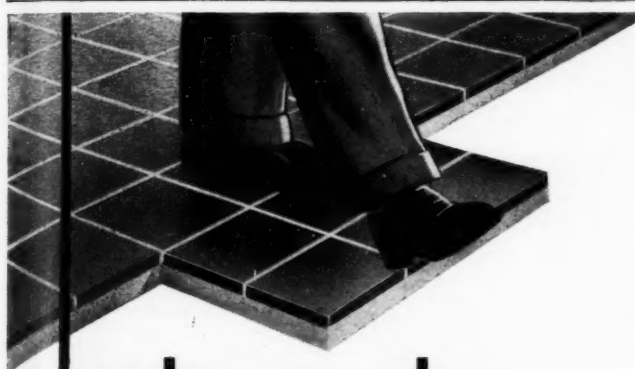
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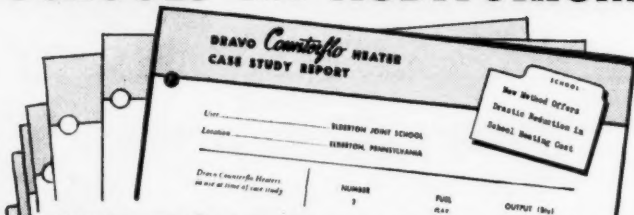
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Because . . . "NATCOR has the Appeal that invites them in"

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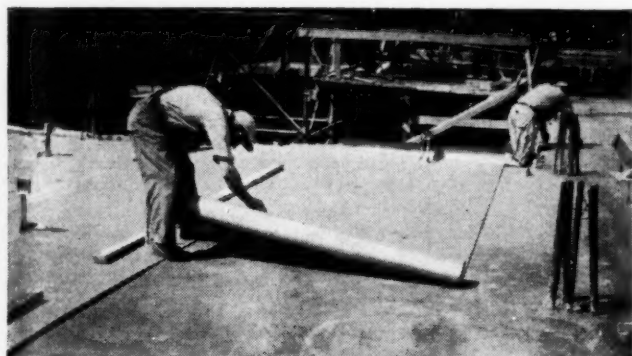
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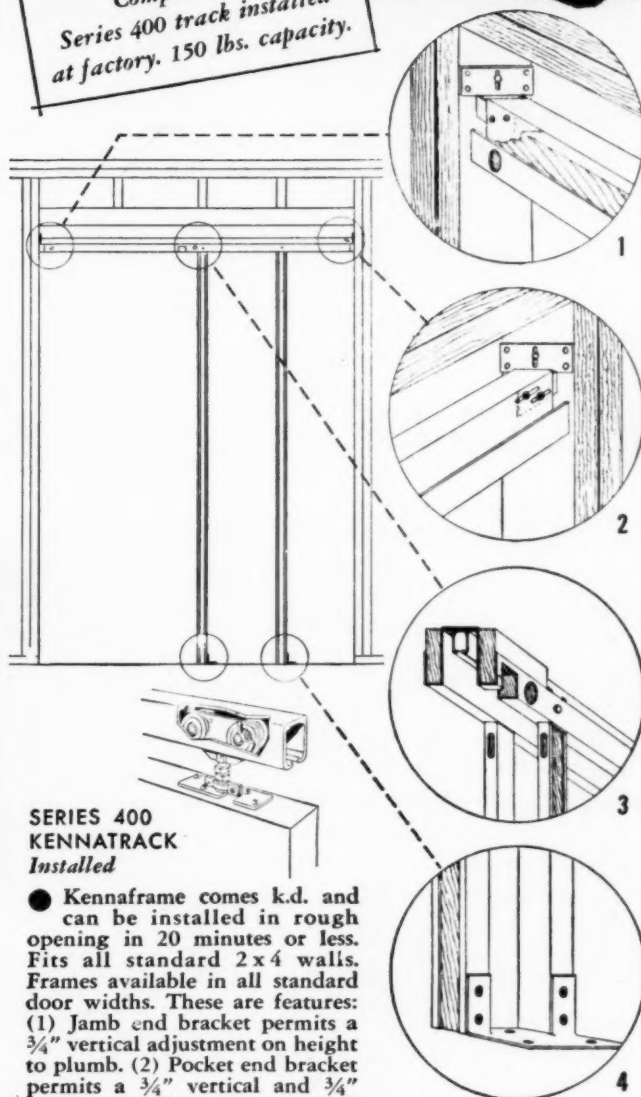
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THE RECORD REPORTS

(Continued from page 388)

COMPETITIONS

• A number of fellowships for 1953-54 will be awarded by the American Academy in Rome for work in architecture, landscape architecture, sculpture, history of art and classical studies. Architectural fellowships will carry \$1250 a year, plus living and travel costs, and will begin on October 1, 1953.

Applications must be submitted by January 1, 1953. Information is available from the Executive Secretary, American Academy in Rome, 101 Park Ave., New York 17, N. Y.

• Crane Company of Chicago has announced an architectural competition "dedicated to ideas for bathrooms, kitchens and utility rooms," with prizes of \$3000 for four first awards, \$1500 for four second awards, \$750 for four third awards and 40 awards of \$100 each. The competition, which has been approved by the Committee on Competitions of the American Institute of Architects, is open to architects, designers, draftsmen and students.

All entries must be in by December 15. Contest rules and further information can be obtained from the Crane Company, 836 South Michigan Ave., Chicago 5, Ill.

OBITUARY

C. HOWARD CRANE, Detroit and London architect who had designed more than 200 theaters in this country, died August 14 at his home in London. He was 67.

Mr. Crane began the practice of architecture in Detroit and maintained an office there after he moved to London 20 years ago. Earl's Court of London, 118-ft-high arena seating 30,000, was among the structures for which Mr. Crane was architect; it was built over a network of six railway lines without stopping a single train during construction.

ROBERT H. EDWARDS, partner in the firm of Edwards & Stoye, Architects, of

(Continued on page 396)



...for suburban homes
beyond the water mains

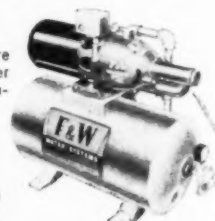


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Made in
7
Sizes

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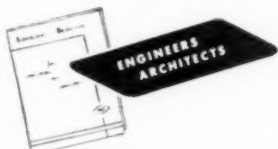
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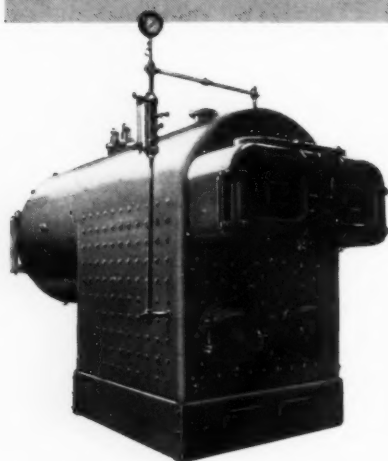
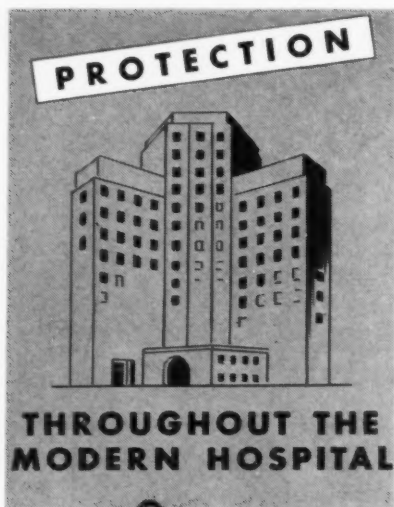
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THE RECORD REPORTS

(Continued from page 392)

Sayville, N. Y., died August 14. He was a member of the class of 1939 at Pratt Institute. The practice will be continued under the name of Carl B. Stoye, Architect, with offices at 22 Main Street, Sayville, N. Y.

HARRISON SMITH, 71, a partner in the New York engineering firm of Sanderson & Porter, died August 21 after several months' illness. Before the first World War Mr. Smith joined the staff of T. A. Gillespie, Boston, engaged in subway and drydock construction; during both first and second World Wars he did design and construction work on Federal ordnance plants. He became associated with Sanderson & Porter in 1919. He was a 1905 graduate in civil engineering of Rensselaer Polytechnic Institute.

MARY WRIGHT, author and designer and wife of the industrial designer Russel Wright, died August 15 at her home in New York after a long illness. She was 47 years old. Mrs. Wright collaborated with her husband in designing informal modern table service, including his American Modern dinnerware. The Wrights were co-authors last year of "Easier Living," a book presenting their formula for present-day living in the home.

BERNARD KARFIOL, 66-year-old painter who was among the exhibitors in the revolutionary Armory Show in New York in 1913, died at his home in Irvington-on-Hudson, N. Y., August 16. Mr. Karfiol's work has been purchased by many of the country's leading museums and private collectors. His awards included the first William A. Clark prize of \$2000 and the Corcoran Gold Medal at the Corcoran Art Gallery, Washington, in 1928.

CORRECTION

The RECORD regrets that a caption for a news picture in a recent issue incorrectly described the George S. Rider Company as architects for the E. F. Hauserman Company's new building in Cuyahoga Heights, Cleveland. The George S. Rider Company are engineers.

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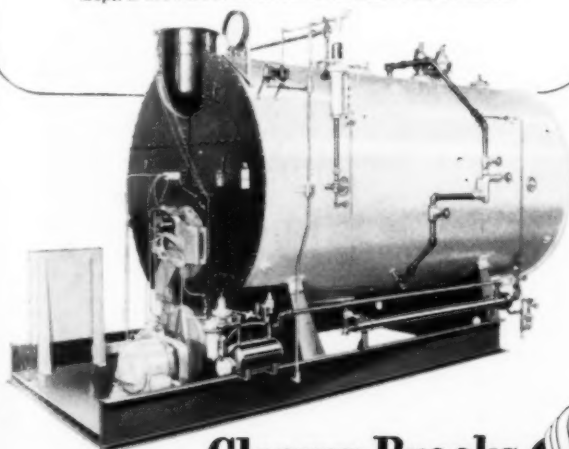
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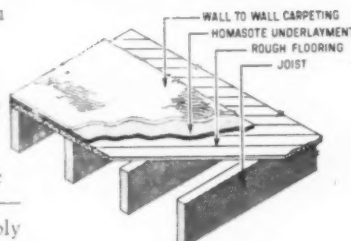


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REQUIRED READING

(Continued from page 48)

(13, Queen Anne's Gate, London, S.W. 1, England). 1952. 5½ by 9 in. 266 pp., illus.

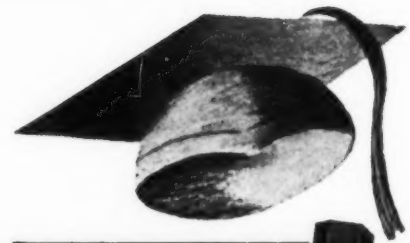
The architect has felt for a long time the need for better information to aid him in drawing mental pictures of how structures will act when subjected to different kinds of loads. He wants to be able to sense the proportions required for a particular material as used in various structural forms, when he is doing his preliminary planning, without having to go through laborious calculations. There are many good books on structural design, but this one takes a new approach—factual, but without long and involved theoretical discussions. Neither does it attempt to examine all the factors involved in the choice of structure for particular types of buildings. It is intended more as an introduction to structural design and is directed mainly to students and architects. The authors say that "Until the student achieves the ability to 'feel' how forces act and react in the support of buildings, he cannot hope to apprehend and put into practice the sculptural and volumetric conceptions which form the basis of great architecture."

The collaborative efforts of an architect and an engineer in doing this book, and the fact that both of them teach as well as practice have left a good mark on this book, which the reader may wish had been developed into a larger volume.

Imaginative engineers and architects have shown that material distributed in the most efficient way to resist stresses can save materials as well as result in stronger buildings. In the chapter, "Survey of Structural Forms," the authors present analogies which use structural forms taken from nature such as a turtle's shell. Parts of this chapter are based on some of the ideas of Fred Severud, New York City structural engineer, who has long used nature to explain the reason for structural shapes and forms.

In discussing "Procedure in Structural Design," the authors point out that the infinite number of possible combinations of structural forms present a bewildering problem of selection, and that the designer must be able to realize the limitations of each system and to visualize the type of building to which it may be applied most effectively.

(Continued on page 404)



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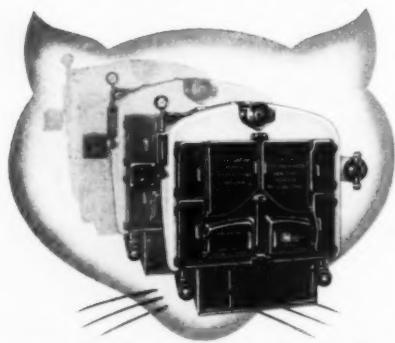
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REQUIRED READING

(Continued from page 400)

Although the book deals with British standards and their practices in the utilization of materials and the selection of specific types of structures, this is not a serious limitation, since the reader can call to mind parallel examples in this country.

Forty-four pages of photographs at the end of the book show some of the more spectacular building structures in Europe and also in the United States. They do not serve as much to illustrate how structures perform, but rather as to what the imaginative architect and engineer can do.

PERRET'S MAXIMS ON ARCHITECTURE

Contribution A Une Theorie De L'Architecture. By Auguste Perret. Librairie des Alpes, Andre Wahl (6 rue de Seine, Paris 6e, France), 1952. 4 1/4 by 7 1/2 in. 60 pp.

In a few blank-verse-like phrases, Auguste Perret sums up his definitions and credo of architecture in this, his first book. Long famous for his maxims and for his "concise, emphatic and pithy conversation—in the manner of the old school," Perret has linked together some of his most famous remarks from speeches and lectures to express his beliefs. These include an avid preference for the frank use of reinforced concrete in construction, a resistance to the influence of "schools" and to pure "shock effect" in design, and a long-standing crusade for the integration of building skills with art. Until recent years, when he has been awarded the highest possible honors in architecture in Europe and the United States, Perret has been under constant criticism for acting both as builder and designer of his projects. This is reflected in his definition of architecture, "Architecture is the art of organizing space, it is by construction that it expresses itself. An architect is the constructor who satisfies the passing by the permanent."

The book, written in sonorous and elegant French, is concluded with the following—"He who, without betraying materials or modern programs, would produce a work which seemed to have always existed, who, in a word, would be *banale*, I say that he could consider himself satisfied."

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(See page 6 for Index to Advertising)